

# Scottsdale Community College

## Course Catalog Archive

### 2020-2021

This document is an archival record of the course catalog for the 2020-2021 academic year as of August 2020. It is a printable option of the online course catalog for accreditation organizations, agencies and college offices for data collection, evaluation purposes and referencing.

All courses are subject to change throughout the catalog year. Current course information, including descriptions, outlines, competencies, and credits can be found on the following website, which is the official repository for all MCCCDC credit courses:

#### **Center for Curriculum and Transfer Articulation**

<https://curriculum.maricopa.edu/curriculum/courses/search-course-bank>



**SCOTTSDALE  
COMMUNITY COLLEGE**

A MARICOPA COMMUNITY COLLEGE

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# Maricopa Community Colleges 'Course Subjects

## Comprehensive List of Active Subjects for Credit Curriculum

### Subject Formal Subject Description

AAA	Advancing Academic Achievement
ABA	Arizona Builders Alliance
ABC	Associated Builders and Contractors
ABS	Applied Biological Sciences
ACC	Accounting
ACT	Aircraft Construction Technologies
ADA	Advertising Arts
AEN	Alternative Energy
AES	Aerospace Studies
AET	Aeronautics
AFR	African American Studies
AGB	Agribusiness
AGL	Agricultural Landscape
AGS	Agricultural Science
AHU	Arabic Humanities
AIR	Airline Operations
AIS	American Indian Studies
AIT	Automated Industrial Technology
AJS	Administration of Justice Studies
ALT	Academic Literacy
AMS	Automated Manufacturing Systems
AMT	Aircraft Maintenance Technology
AMX	AMX
ANH	Animal Health
ANS	Animal Science
APT	Automotive Performance Technology
ARB	Arabic
ARC	Architecture
ARH	Art Humanities
ART	Art
ASB	Anthropology
ASD	Addictions and Substance Use Disorders
ASE	Automotive Service
ASL	American Sign Language ( <i>first effective term Fall 2019; formerly SLG Sign Language</i> )
ASM	Anthropology
AST	Astronomy
ATC	Air Traffic Controllers
ATP	Automation Technology
AUD	Audiology

AUT	Automotive Technology
AVT	Avionics Technology
AZG	Arizona Government University
BAW	Beauty and Wellness
BHS	Behavioral Health Services Technology
BIO	Biology
BKL	Bricklaying: Apprenticeship
BLT	Building Safety and Construction Technology
BME	Biomedical Equipment Technology
BPC	Business-Personal Computers
BTO	Business Technology for the Office
CAD	Computer-Aided Drafting
CAP	Counseling and Applied Psychology
CAT	Complementary and Alternative Therapies
CCE	Court Reporting Continuing Education
CCS	Chicana and Chicano Studies
CCT	Corporate Computer Technology
CDA	Clinical Dental Assisting
CDH	Community Dental Health
CET	Civil Engineering Technology
CFS	Child/Family Studies
CHA	Community Health Advocate
CHD	Chemical Dependency
CHI	Chinese
CHM	Chemistry
CIA	Crime and Intelligence Analysis
CIS	Computer Information Systems
CLD	Cloud Computing
CNS	Construction
CNT	Cisco Network Technology
COL	College Success
COM	Communication
CON	Construction
COV	Covey
CPD	Counseling and Personal Development
CPS	Center for Public Service
CRA	Clinical Research Associate
CRC	Clinical Research Coordinating
CRE	Critical Reading
CRW	Carpentry: Apprenticeship
CRW	Creative Writing
CSC	Computer Science
CSI	Credit Services Industry
CSM	Customer Service Management

CSP	Clinical Specimen Processing
CSR	Customer Service Representative
CTE	Career and Technical Education
CTP	Computer Transaction Processing
CTR	Court Reporting
CTT	Caterpillar Technician Training
CUL	Culinary Arts
CWE	Career Work Experience
DAE	Dental Assisting Education
DAH	Dance Humanities
DAN	Dance
DCP	Direct Care Provider
DFT	Drafting Technology
DHE	Dental Hygiene Education
DIE	Diesel/Heavy Equipment Technology
DMI	Diagnostic Medical Imaging
DMS	Diagnostic Medical Sonography
DPR	Disaster Preparedness and Emergency Response
ECE	Engineering Science
ECH	Early Childhood Education
ECN	Economics
ECT	Electric Courtroom Technology
EDA	Education of Adult Learners
EDM	EDM
EDS	Education Support Services
EDU	Education
EEC	Endorsement for Early Childhood
EED	Early Education
EEE	Electrical Engineering
EEG	Electroneurodiagnostic Technology
EEP	Early Education Professions
EFE	Education Field Experiences
ELA	Electrician: Apprenticeship
ELC	Electricity
ELE	Electronic
ELN	eLearning
ELT	Electronics Technology
EMT	Emergency Medical Technology
ENG	English
ENH	English Humanities
ENV	Environmental Sciences
EPD	Education Professional Development
EPS	Entrepreneurial Studies
EQS	Equine Science

ESL	English as a Second Language
ESS	Employment Support Systems
ETH	Ethnic Studies
ETL	Excellence/Teaching/Learning
EUT	Electric Utility Technology
EXS	Exercise Science
FAC	Facilities Management
FCS	Family and Consumer Science
FIN	Financial Planning
FLA	Foreign Language Acquisition
FMP	Film and Media Production ( <i>first effective term Fall 2020; formerly VPT Video Production Technology</i> )
FMT	Film, Media, and Theatre ( <i>first effective term Fall 2020; formerly TCM Telecommunication</i> )
FON	Food and Nutrition
FOR	Forensic Science
FPA	Fiduciary Practices in Arizona
FPT	Forensic Pathology Technology
FRE	French
FSC	Fire Science Technology
FST	Food Science and Technology
FUS	Future Studies
GAM	Gaming Management
GBS	General Business
GCO	Golf Course Operations
GCU	Cultural Geography
GER	German
GIS	Geographic Information Science
GLG	Geology
GLO	Global Citizenship
GLZ	Glazing: Apprenticeship
GPH	Physical Geography
GRK	Greek
GRN	Gerontology
GST	Game Studies
GTC	General Technology
HBR	Hebrew
HCC	Health Core Curriculum
HCE	Health Care Education
HCR	Health Care Related
HCS	Hospital Central Service
HEB	Hebrew
HEC	Management, Consumerism and General
HEO	Heavy Equipment Operation
HES	Health Science
HFA	Heat and Frost Technology

HIM	Health Information Management
HIP	Home Inspection Program
HIR	Home Improvement Retail
HIS	History
HLP	Health Professions
HLR	Health Related
HMT	Hazardous Materials Technology
HON	Honors
HRC	Healthcare Regulatory Compliance
HRM	Hotel Restaurant Management
HSA	Human Services Administration
HSE	Health Sciences Education
HSM	Health Service Management
HST	Histologic Technology
HTM	Healthcare Technology Management
HUC	Health Unit Coordinating
HUM	Humanities
HVA	Heating, Ventilating and Air Conditioning
IBS	International Business
ICE	Imaging Continuing Education
IEC	Independent Electrical Contractors
IFS	Information Studies
IGS	Integrated Studies
IMC	Interstate Mechanical Contractors
IND	Industry
INS	Insurance Studies
INT	Interior Design
INV	Innovation
IPH	Integrated Public Health
IPP	Interpreter Preparation Program
IRW	Ironworking: Apprenticeship
ISS	Interdisciplinary Science Studies
ITA	Italian
ITD	Infant/Toddler Development
ITH	Italian Humanities
ITS	Information Technology Security
JAS	Justice and Government Agencies Administration
JCI	Johnson Controls Institute
JPN	Japanese
JRN	Journalism
JUD	Judicial Studies
LAS	Paralegal Studies
LAT	Latin
LBA	Laboratory Assisting

LBS	Library Skills
LBT	Library Technology
LDR	Leadership
LEO	Law Enforcement Operations
LET	Law Enforcement Technology
LRS	Leadership Skills
LST	Labor Studies
MAE	Media Arts and Entertainment
MAS	Medical Assisting
MAT	Mathematics
MCM	Mediation and Conflict Management
MCO	Mass Communications
MDL	Medical Laboratory Science
MEC	Mechanical Apprenticeship
MET	Manufacturing Technology
MGT	Management
MHL	Music: History/Literature
MIS	Military Science
MIT	Manufacturing Industrial Technology
MKT	Marketing
MMT	Multimedia Technology
MNT	Micro and Nano Technology
MPT	Manufacturing Production Technology
MPT	Manufacturing Production Technology
MRT	Medical Radiography/Radiologic Technology
MSP	Mortuary Science Program
MST	Microsoft Technology
MTC	Music: Theory/Composition
MTR	Medical Transcription
MUC	Music: Commercial/Business
MUE	Music: Education
MUP	Music: Performance
MWR	Millwright: Apprenticeship
MYO	Mayo Clinic Courses
NAV	Navajo
NCE	Nursing: Continuing Education
NET	Networking Technology
NMS	New Media Studies
NMT	Nuclear Medicine Technology
NUC	Nuclear Medicine Technology
NUR	Nursing Science: Basic
NVH	Navajo Humanities
OAS	Office Automation Systems
OCS	Office Career Success

OSH	Occupational Safety and Health
OTA	Occupational Therapy Assistant
PAD	Public Administration
PAR	Paralegal Studies
PCM	Plastering/Cementing: Apprenticeship
PED	Physical Education
PFT	Plumbing/Pipefitting: Apprenticeship
PGR	Professional Growth
PHI	Philosophy
PHS	Physical Science
PHT	Pharmacy Technology
PHY	Physics
PIM	Pima
PLB	Phlebotomy
PME	Paramedicine
PNT	Painting/Decorating: Apprenticeship
PON	PeriOperative Nursing
POR	Portuguese
POS	Political Science
PPT	Power Plant Technology
PRM	Property Management
PSC	Public Safety Communication
PSG	Polysomnographic Technology
PSY	Psychology
PTA	Physical Therapy Assisting
QCT	Quality Control Technology
RAD	Radiologic Technology
RBT	Robotics Technology
RDG	Reading
REA	Real Estate
REC	Recreation
REL	Religious Studies
RES	Respiratory Care
ROF	Roofing: Apprenticeship
RPT	Radiation Protection Technician
RTR	Realtime Reporting
RTT	Radiation Therapy Technology
RUS	Russian
RVT	Recreational Vehicle Technology
SBS	Small Business Management
SBU	Society and Business
SCT	Sustainability Career and Technical
SEM	Secondary Basic Emergency Medical Technology
SFS	Secondary Fire Science Technology



SGT	Surgical Technology
SLC	Studies in Language and Culture
SLG	Sign Language ( <i>last effective term Summer 2019; see ASL American Sign Language</i> )
SLM	Senior Living Management
SLP	Speech Language Pathology
SMI	Severe Mental Illness
SML	Sheet Metal: Apprenticeship
SMT	Semi-Conductor Manufacturing Technology
SOC	Sociology
SPA	Spanish
SPH	Spanish Humanities
SPM	Sports Management
SSH	Sustainability/Social Sciences and Humanities
STO	Storytelling
SUN	SundtCorp
SUS	Sustainability/Natural Sciences
SWU	Social Work
TCJ	Tribal Court Justice Studies
TCM	Telecommunications ( <i>last effective term Summer 2020; see FMT Film, Media and Theatre</i> )
TDR	Trade Related
TEC	Textiles and Clothing
THE	Theatre
THF	Theatre and Film
THP	Theatre Performance/Production
TLT	Telecommunications Technology
TQM	Total Quality Management
TRS	Translation and Interpretation
TTD	Truck Trailer Driving
TVL	Travel Agent Technology
UAS	Unmanned Aircraft Systems
UCS	Utilities Customer Service
UTP	Utilities Technology Partnerships
VET	Veterinary Technology
VPT	Video Production Technology ( <i>last effective term Summer 2020; see FMP Film and Media Production</i> )
VRT	Virtual Reality Technologies
WAC	Writing Across Curriculum
WED	Wellness Education
WFR	Workforce Re-Entry
WKO	Work Orientation
WLD	Welding Technology
WRT	Water Resource Technology
WST	Women's Studies
WWM	Water/Wastewater Management
YAQ	Yaqui Indian History and Culture

## Special Course Types

### Cooperative Education Courses

Cooperative Education courses combine classroom theory with supervised work experience. Students have the opportunity to earn college credit or planned growth in a job that is related to their career goals. A joint agreement is set up among the employer, the college and the student to facilitate the process. At Scottsdale Community College, Cooperative Education is available to students in nearly every discipline and is required in certain occupational programs. Students meet with the program director meets with students to determine their eligibility and assists students to locate suitable positions which relate to their field of study. A student's present job may also qualify. Each student is assigned to a faculty-coordinator who monitors the student's progress by making on-site visits to the place of employment.

#### **Qualifications for participation include:**

1. Completion of at least 12 college credits.
2. At least a 2.6 Grade Point Average (GPA)
3. Current enrollment in at least one class related to the student's major field of study.
4. Obtain a position that directly relates to the student's academic and career goals if current job does not meet this requirement.
5. Must have authorization to work in the U.S.

#### **Determination of College Credit**

1. Completion of a minimum of 80 hours of work per semester for each credit to be earned, with a maximum of four (4) credit hours per semester. A student may accumulate a total of six (6) credit hours. However, the number of credits which can be applied toward a degree may be limited by individual departmental requirements.
2. Successful achievement of one learning objective for each credit to be earned.
3. Completion of Final Report, Employer Evaluation of Student Performance and documentation of completed learning objectives.
4. Students receive a letter grade for the Cooperative Education experience. The grade is based on specific criteria and is awarded by the faculty-coordinator to whom the student is assigned.

## Application Process

For information on the application process, students must contact the [SCC academic department](#) of the course prefix/subject in which they wish to receive credit. The prefix for the credits for which the student registers is determined by the academic department (see example below):

<b>XXX296WC</b>	<b>Cooperative Education</b>	<b>1 credit</b>	<b>5 periods</b>
<b>XXX296WC</b>	<b>Cooperative Education</b>	<b>2 credits</b>	<b>10 periods</b>
<b>XXX296WC</b>	<b>Cooperative Education</b>	<b>3 credits</b>	<b>15 periods</b>

Tuition for the Cooperative Education credits is the same as for other academic credits.

## Veterans and Financial Aid Benefits

Veterans and financial aid recipients must also have written departmental approval for any courses not listed as electives or core courses within a specific program. Failure to do so may result in a pro rata reduction in financial assistance.

## Internship Courses

An approved organization for SCC students will host an intern working to complete the agreed upon learning objectives. A Faculty Advisor will assist the student, ensuring a quality paid experience and partner with the site to complete purposeful learning and working objectives. The experience should be approved by an SCC Faculty Advisor, intentional and serve to enhance a student's academic, career, and personal development through mentoring. SCC students will register for the internship course at the beginning of the semester (80 hours = 1 credit, 160 hours = 2 credits, 240 hours = 3 credits). To learn more about an internship, please contact: Mollie Sutherland, Internship Coordinator, 480-423-6138, [internships@scottsdalecc.edu](mailto:internships@scottsdalecc.edu).

## Special Project Courses

Special projects are available in a variety of disciplines and provides opportunities for individualized learning experiences for students. The prefix for the credits for which the student registers is determined by the academic department (see example below):

<b>XXX298AA</b>	<b>Special Projects</b>	<b>1 credit</b>	<b>1 period</b>
<b>XXX298AB</b>	<b>Special Projects</b>	<b>2 credits</b>	<b>2 periods</b>
<b>XXX298AC</b>	<b>Special Projects</b>	<b>3 credits</b>	<b>3 periods</b>

Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.

## Special Topics Courses

These courses provide a flexible option for a discipline to offer classes on a variety of different contemporary and/or special interest topics that are beyond the scope of current offerings. Special Topics courses may provide continuing education/professional development opportunities for students and professionals in the field. The different credit variants allow faculty to select a course with contact hours appropriate to the breadth and depth of the selected topic. The prefix for the credits for which the student registers is determined by the academic department (see example below):

<b>XXX294AA</b>	<b>Special Topics</b>	<b>1 credit</b>	<b>1 period</b>
<b>XXX294AB</b>	<b>Special Topics</b>	<b>2 credits</b>	<b>2 periods</b>
<b>XXX294AC</b>	<b>Special Topics</b>	<b>3 credits</b>	<b>3 periods</b>

## Volunteerism: Service Learning Courses

Service-learning courses afford opportunities for students to apply classroom learning to real life situations while addressing needs of local agencies in a volunteer capacity. These experiences create context and relevance for students' programs of study as well as fostering problem-solving skills and effective teamwork. They provide opportunities for civic engagement, character evolution and increased awareness of their community. The prefix for the credits for which the student registers is determined by the academic department (see example below):

<b>XXX282AA</b>	<b>Volunteerism: Service Learning</b>	<b>1 credit</b>	<b>1 period</b>
<b>XXX282AB</b>	<b>Volunteerism: Service Learning</b>	<b>2 credits</b>	<b>2 periods</b>
<b>XXX282AC</b>	<b>Volunteerism: Service Learning</b>	<b>3 credits</b>	<b>3 periods</b>

SCC's Office of Service-learning & Leadership facilitates opportunities for students to connect classroom instruction with real-world experience through service-learning and leadership lessons. Students will develop as more engaged and aware citizens by addressing our local and global community needs. Students, faculty and community members can access more information at the [Office of Service-learning & Leadership website](#). Call 480.423.6545 or email [serve.learn.lead@scottsdalecc.edu](mailto:serve.learn.lead@scottsdalecc.edu).

## Learning Modalities

Scottsdale Community College offers a wide variety of classes in many subjects and also provides a choice of different levels, formats, and types of classes to fit your schedule and learning style. eLearning options available for SCC students include: online, hybrid and web-enhanced face-to-face classes.

### In-Person

Face-to-face course instruction is provided at a specific location on a specific day and time. Class may also be web-enhanced in which learning outside of class uses Canvas, Maricopa Open Educational Resource Learning System (MOER), or other online tools

### Hybrid

Course content is delivered at a specific location on a specific day and time (as with in-person classes), and part of the course is also completed online without a set time to attend. This mixed format offers a combination of face-to-face classroom meetings and the opportunity to work independently.

### Live Online

Course content is delivered at a specific location on a specific day and time (as with in-person classes), and part of the course is also completed online. (**Synchronous - At scheduled times**)

### Online (On Your Time)

Course content is delivered entirely online and is accessed through a learning management system without a set time to attend. Students should have independent access to the Internet. In-person testing may be required. (**Asynchronous - Not at scheduled times**)

### Field Based

Course content is delivered in person at a location relevant to the course content (e.g., hospital, hiking trail, etc.); student is physically present and typically receives hands-on instruction.

### Independent Study

Course content is delivered individually between instructor and student, and coursework is completed independently by student, typically in a self-paced format, checking in with instructor periodically as necessary to fulfill course competencies.

### Private Instruction

Course content is delivered individually between instructor and student consisting of one-on-one meetings at set dates, times, and locations; normally, student is physically present and typically receives hands-on instruction (e.g. musical instrument instruction, voice instruction).

## 2020-2021 Maricopa County Community College District – Active Course Listings Archive

Course	Title	Description	Requisite	Act Type, Credits, Periods, Load
AAA103	Offender Employability Preparation	Inmate information about employment opportunities, vocational training program within state penal institutions, and institutional work ethic expectations. Skills required for employability within state prison system. Opportunity to review vocational interests and skills.	Prerequisites: None.	LEC 1.0 1.0 1.0
AAA104	Visualization in Activated Learning	Techniques for using mental imagery in the activated learning process. Processes include mental rehearsal, relaxation, and affirmation during self-instruction, test taking, interpersonal relationships, and sports	Prerequisites: None.	LEC 1.0 1.0 1.0
AAA105	Peak Performance in Activated Learning	Techniques which enable the individual to achieve levels of peak performance using the activated learning process. Includes methods for developing a high level of motivation and self-discipline to achieve peak performance in areas such as sports, public speaking, and job productivity	Prerequisites: None.	LEC 1.0 1.0 1.0
AAA115	Creating College Success	Strategies to create success in college. Methods for selecting and developing effective academic strategies, increasing self-awareness and developing self-management strategies. Elements of college resources and relationships with others explored in support of students' educational experience	Prerequisites: None.	LEC 1.0 1.0 1.0
AAA150	Strategies for College Success	Focus on increasing student success through college orientation and personal growth, study skills development, and educational and career planning.	Prerequisites: None.	LEC 3.0 3.0 3.0

AAA150AA	College Orientation and Personal Growth	Emphasis on increasing student success through college orientation, identification of learning style and the use of time management, goal-setting, and interpersonal communication strategies	Prerequisites: None.	LEC 1.0 1.0 1.0
AAA150AB	Study Skills Development	Emphasis on increasing student success through the use of study strategies including materials organization, note-taking, reading, test-taking, memory, and critical and creative thinking	Prerequisites: None.	LEC 1.0 1.0 1.0
AAA150AC	Educational and Career Planning	Emphasis on increasing student success through educational and career planning.	Prerequisites: None.	LEC 1.0 1.0 1.0
AAA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AAA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

AAA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ABA101	Hand and Power Tools	Selection, use, maintenance and safety procedures for common hand and power tools used in the construction industry.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.0 1.0
ABA102	Electrical Fundamentals	Fundamentals of electricity including electrical hazards, Occupational Safety and Health Administration (OSHA) regulations, units of measurements and using Ohm's law. Circuit characteristics and the use of Kirchoff's voltage and current laws to calculate voltage drop, current and resistance. Operation and use of specific meters. Includes an introduction to the National Electrical Code (NEC)	Prerequisites: None.	LEC 1.0 1.0 1.0
ABA103	Hand Bending of Electrical Conduit	Conduit bending and installation. Techniques for using hand operated and step conduit benders. Cutting, reaming and threading conduit	Prerequisites: None.	LEC 0.5 0.5 0.5
ABA104	Raceways, Boxes, Fittings, Anchors/Supports	Types and applications of conduit, raceways, wireways and ducts. Types, applications and wiring techniques for conductors. Hardware and systems used to mount and support boxes, receptacles and other electrical components	Prerequisites: Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5



ABA106	Introduction to Materials Handling	Introduction to materials handling equipment and appropriate use for common job-site tasks. Recognize hazards associated with materials handling and proper techniques and procedures.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 0.5 0.5 0.5
ABA111	Drawings and Detail Sheets	Drawings, detail sheets and field sketches. Parts and types of drawings, materials, specifications and special treatments. Includes drawing procedures and sketch applications	Prerequisites: Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
ABA112	Electrical I	Theories and concepts in electrical safety basics and OSHA 10 certification. Introductory concepts in construction math, hand and power tools, drawings, rigging, and materials handling. Emphasis on communication and employability skills.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ABA113	Rigging for Pipefitters	Selection, inspection, use and maintenance of blocks and tackles, chain hoists, come-alongs, jacks and tuggers. Heavy rigging hardware and lifting capacity charts. Procedures for balancing Loads and rigging pipes and valves. Planning the rigging job	Prerequisites: Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA114	Electrical II	Fundamentals of the electrical trade, residential electrical services and test equipment. Emphasis on safety, electrical circuits, theory, National Electrical Code, device boxes. Use and selection of hand bending, raceways, fittings, conductors, cables. Interpretation of electrical drawings.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

ABA115	Intermediate Excavation and Underground Pipe Installation	Terminology related to excavation and underground pipe installation. Identification and use of shoring materials and premanufactured support systems. Installation of vertical shoring. Determination of the fall of sewer lines. Grades and elevation of trenches. Backfilling procedures. Equipment and procedures for underground pipe installation	Prerequisites: Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
ABA117	Socket and Butt Weld Pipe Fabrication	Socket and butt weld piping including materials, fittings and drawings. Use of oxyacetylene torch for cutting plate steel, holes and pipe. Pipe end preparation including length determination, backing rings, clamps, alignment tools and procedures. Determining pipe length and aligning fittings	Prerequisites: Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 4.0 6.0 6.0
ABA120	Carpentry Fundamentals	Overview of the carpentry trade. Apprenticeship programs and responsibilities of the apprentice. Types and uses of nails, fasteners and adhesives. Types of wood, lumber and manufactured wood products	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA121	Floor and Wall Systems	Framing systems, floor construction, center beam and post support systems. Construction of sills, joists and bridging. Subflooring, mechanical connectors and the use of prefabricated joists. Wall construction, stud walls, panelized walls, masonry walls, post and beam walls, use of metal studs and drywall construction.	Prerequisites: (Registered apprentice status and a grade of C or better in ABA120) or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
ABA122	Electrical III	Theory and application of alternating current, lighting, conduit bending, pull and junction boxes.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

ABA124	Electrical IV	Principles of conductor installations, cable trays, conductor terminations and splices. Emphasis on grounding, bonding, circuit breakers, and fuses. Fundamental concepts of control systems.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ABA130	Installation of Electric Services	Electric services for commercial and industrial installations. Blueprints, diagrams and electrical calculations. Grounding, connecting three phase services and the installation of panelboards, switches and load centers	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA135	Cast-In-Place Stairs	Cast-In-Place and Precast stair installation techniques, forming, erecting and safety procedures. Review American Concrete Institute (ACI) Codes and standard specifications.	Registered apprenticeship status or permission of Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
ABA136	Communications in Construction	Communication in the construction industry. Positive direct communication, written communication, active listening, understanding, negotiation, and dealing with difficult people. Communication skills at all organizational levels, with groups, combining oral and written communication for maximum effectiveness.	Prerequisites: None.	LEC 1.0 1.0 1.0
ABA150	Advanced Calculations for Electricians	Advanced mathematical calculations in the electrical industry. Powers and roots in watts, voltage, current and resistance. Metric and engineering units. English and metric systems for length, area, volume and mass, and energy and temperature measurements. Ratios, proportions, formulas, symbols and representation. Trigonometry and the Pythagorean theory. Plane and rotating vectors. Basic functions of the scientific calculator for electricians	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5

ABA151	Sheetmetal Fundamentals	Use and maintenance of tools used in the sheetmetal trade. Fasteners and supports for sheetmetal ductwork. Sheet metal types and gages. Use of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) manuals	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA154	Fabrication I - Parallel Line Development	Parallel line development. Pattern layout procedures and fabrication of selected ductrun fittings.	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	L+L 2.0 4.0 4.0
ABA178	Plumbing Fabrication	Procedures for cutting and joining plastic pipe. Soldering and brazing copper tubing and the use of oxyacetylene equipment. Measuring, cutting, reaming, threading and assembling carbon steel pipe. Assembling cast iron soil pipe with lead and oakum joints and procedures for joining no-hub cast iron pipe. Making flared and compression joints with soft copper tubing. Procedures for cutting and joining clay and concrete pipe. Includes hands-on practice	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 3.0 3.0 3.0
ABA179	Installing and Sizing Water Supply Piping	Connecting piping to a water main. Plumbing connections to buildings and air and hydrostatic testing of water supply piping. Operation and installation of water heaters. Types, operation and installation of water meters. Installation of water supply systems to given structures. Effects of valves, fittings and piping on water pressure. Calculations of pressure drop and sizing procedures for water supply piping. Principles of back siphonage and backflow prevention	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 3.0 3.0 3.0

ABA181	REGULATING WATER PRESSURE	Function of water pressure-reducing valves and booster systems. Installation of water pressure-reducing valves and booster systems. Types of water booster systems. Adjustment of water pressure reducing valves and booster systems. Maintenance of water pressure reducing valves and pressure booster systems	Prerequisites: None.	LEC 1.0 1.0 1.0
ABA183	INSTALLING AND SERVICING VALVES AND FAUCETS	Different classifications and applications of valves and faucets. Installation and servicing of valves and faucets. Pressure ratings for specific types of valves. Troubleshooting and repair procedures	Prerequisites: None.	LEC 1.5 1.5 1.5
ABA192	Plumbing Level I	History of plumbing, modern plumbing, safety, human relations, and construction career opportunities. Hand and power tool safety, use, and maintenance. Plumbing drawings, components, and symbols. Materials, schedules for plastic, copper, and cast-iron. Fittings, valves, hangers, and supports. Measuring, cutting, reaming, and joining pipe. Safety precautions for installation, operation and maintenance. Fixtures and faucets. Drain, waste, and vent systems. Water distribution systems.	Prerequisites: None.	L+L 3.0 3.0 3.0
ABA201	Overcurrent Protection	Overcurrent protection including terminology, safety factors, conformance to the National Electrical Code (NEC), fuses, circuit breakers and short circuits. Selection and sizing of overcurrent protection	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA202	Conductor Selection and Calculations	Conductor characteristics and selection criteria for specific applications. National Electrical Code (NEC) regulations governing conductors and conductor protection methods for single and branch circuits. Calculations for voltage drop and sizing for specific Loads	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0

ABA203	Load Calculations - Branch Circuits	Load calculations for single-phase and three-phase branch circuits. Sizing branch circuit overcurrent protection devices. Derating factors and calculating ampacity for single-phase and three-phase loads. Use of National Electrical Code (NEC) to calculate residential loads. Selecting branch circuit conductors and overcurrent protection devices for electric heat, air conditioning equipment, motors and welders	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA204	Contactors and Relays	Operating principals of contactors and relays. Function in an electrical system. Operation and installation of specific contactors and relays. Interpretation of wiring diagrams. Connect and test a simple control circuit	Prerequisites: None.	LEC 1.0 1.0 1.0
ABA207	Construction Trades: Green Environment	Daily activities at work and at home that affect green environment. Leadership in Energy and Environmental Design (LEED) rating process. Carbon footprint and ways to reduce it. Construction of buildings that affect green environment. Application of principles of green building rating system.	Registered apprenticeship status or permission of Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
ABA222	Introduction to Welding, Brazing and Cutting	Arc welding theory and safety hazards. AC, DC and AC-DC welding machines. Use of electrodes and safety requirements for arc-welding. Basic welding techniques and gas metal-arc and gas tungsten-arc welding processes. Brazing and cutting using an oxyacetylene torch.	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	L+L 2.0 3.0 3.0
ABA226	Field Measuring and Fitting	Field measuring practices including applicable mathematical formulas and functions. Includes problem solving exercise	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5

ABA231	Introduction to Reinforcing Concrete	Use of reinforced concrete and reinforcing steel. Reinforced concrete in specific settings. Bar supports, bar lists, fabrication options, cutting, bending, tying, splicing and placing reinforcing bars (rebars).	Prerequisites: (Registered apprentice status and a grade of C or better in ABC135) or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA232	Electrical V	The course content includes Load Calculations - Branch and Feeder Circuits, Conductor Selection and Calculations, Overcurrent Protection, Raceways/Wiring/Devices and Boxes, Voice/Data and Video.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ABA234	Electrical VI	Theories and concepts in distribution equipment, transformers, and commercial electrical services. Emphasis on motor calculations and voice/data and video. Operation of motor controls.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ABA242	Electrical VII	Principles of course load calculations, feeder and services and specialty transformers. Selection of standby and emergency systems. Emphasis on basic electronic theory, fire alarm systems and health care facilities.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ABA244	Electrical VIII	Principles of heating, ventilation, and air conditioning (HVAC) controls and heat tracing. Use and control of freeze protection. Basics in motor operation and maintenance. Focus on medium-voltage terminations/splices and special locations. Fundamentals of Crew Leadership.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ABA251	High Voltage Termination and Splicing	Terminations and splices in high voltage systems (600+ volts). Identifying and splicing specific types of cables and making terminations. Includes using splicing kits and following manufacturer's specifications. Testing techniques and calculations	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0

ABA252	Load Calculations Feeder and Services	Calculating basic electrical Loads. Load calculations for residential, commercial and industrial facilities, including primary feeder Loads, service Loads, lighting, motors, special Loads and heating, ventilation and air conditioning (HVAC)	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA253	Motor Maintenance-Part 2	Principles of electric motor operation including reduced voltage starting. Properties of insulation and motor service conditions. Dielectric Voltage Withstand Test. Cleaning and drying electrical insulation. Troubleshooting electric motors	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA254	Advanced Motor Controls	Operating principles of motor controls including solid-state controls. Motor braking, jogging, plugging and safety. Introduction to Programmable Logic Controller (PLC) motor programming	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
ABA255	Commercial, Industrial and Special Lighting	Operating characteristics of incandescent, fluorescent and high intensity discharge lamps. Lighting controls and fixture installations. Blueprint reading exercise for commercial and industrial installations. Lighting requirement calculations. National Electrical Code (NEC) requirements for specialty lighting fixtures	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
ABA256	Fire Alarm Systems	Operating principles of fire alarm systems. Components of fire alarm and security systems. Installation of heat and smoke detectors. National Electrical Code (NEC) requirements. Troubleshooting and maintaining fire alarm systems	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABA257	Specialty Transformers and Emergency Systems	Operation of specialty transformers. Harmonics and problem solving techniques. Operating principles of engine-driven generators and alternators. Manual and automatic transfer switches. National Electrical Code (NEC) requirements for standby emergency systems	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0



ABA258	Special Locations	Various electrical device requirements for special locations such as assembly occupancies, theaters, carnivals, agricultural buildings, marinas, temporary installations, wired partitions, water installations.	Registered apprenticeship status or permission of Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
ABA292	Leadership Skills - Construction Foreman	Role of the construction field supervisor. Characteristics of an effective supervisor. Problem solving and safety responsibilities. Planning, estimating and scheduling. Construction costs and the supervisors role in cost and resource control	Prerequisites: None.	LEC 1.0 1.0 1.0
ABA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ABA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ABA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ABC101	Field Engineering Principles	Basic field engineering including terminology, methods of land description, tools and instruments. Government Land Survey System procedures	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
ABC107	Electrical Blueprints, Schedules, and Specifications	Symbolic language of blueprints and their different components. Includes examination of construction drawings, schedules, and specifications	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC112	Introduction to Sheet Metal Apprenticeship	History and development of apprenticeship programs in the sheet metal trade. Obligations and responsibilities of workers, employers and OSHA (Occupational Safety and Health Administration). Rules and guidelines for general job-site safety	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC116	Pipefitting Blueprints and Specifications	Reading and interpretation of piping drawings. Tracing piping runs through several drawings. Material take-offs for basic piping configurations	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC117	Pipe Cutting and Installation	Setting-up and operation of oxyacetylene equipment including flame cutting, straight and bevel cuts, marking and cutting pipe. Installation of pipe hangers, supports, rod attachments and masonry anchors. Safety stressed.	Registered apprenticeship status or permission of Apprenticeship Coordinator.	LEC 2.0 2.0 2.0

ABC118	OSHA Standards and Regulations	Provisions of and implementation of Occupational Safety and Health Administration (OSHA) Act in the work place. Rights and responsibilities under the OSHA Act. Appeals process, record keeping, and voluntary protection programs. OSHA's construction and general industry standards. Overview of the requirements of the more frequently referenced standards.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 1.5 1.5 1.5
ABC119	Basic Safety	Overview of safety rules and procedures for working on construction job sites	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC120	Basic Calculations for Construction	Addition, subtraction, multiplication and division of whole, decimal, fraction and metric numbers. Percentage and fraction conversions. Metric units of length, weight, volume and temperature. Metric system as it relates to the construction trade. Basic algebra and geometry operations and equations. Area and volume calculations of shapes.	Prerequisites: None.	L+L 1.5 1.5 1.5
ABC121	Introduction to Hand and Power Tools	Overview of the use, maintenance and safety procedures for common hand and power tools.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
ABC122	Rigging Safety and Equipment	Rigging safety, equipment and inspection. Includes crane hand signals, common rope knots, types of derricks and cranes and safety procedures for rigging and moving materials and equipment	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC123	Introduction to Construction Drawings	Basic concepts of construction drawings, including terms and symbols. Drawing interpretation, use of drawing dimensions and recognition of drawing classifications.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 0.5 0.5 0.5
ABC124	Conduit Bending	Types of conduit benders and bends. Conduit bending procedures and use of bends in conduit systems	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0

ABC126	Electrical Test Equipment	Selection, inspection, use and maintenance of common electrical test equipment	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC127	Electrical Wiring and Blueprints	Electrical wiring; commercial, industrial and residential. Switches, ground fault circuit interrupters, wiring techniques, installation receptables, service entrance installation, outlet boxes and lighting fixtures. Introduction to electrical blueprints. Lab activities in electrical wiring	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 1.5 1.5 1.5
ABC129	Electrical Boxes and Fittings	National Electrical Code (NEC) criteria for selection of outlet boxes, pull boxes and junction boxes	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 0.5 0.5 0.5
ABC130	Conductor Installation/Termination	Transportation, storage and setup of cable reels, methods of rigging and procedures for installing conductors using cable pulls in raceways and cable trays. Also methods of terminating and splicing conductors	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 1.0 1.0 1.0
ABC131	Cable Tray Installation	National Electrical Manufacturer's Association (NEMA) and National Electrical Code (NEC) requirements for cable tray modified installation and cable installation procedures.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 0.5 0.5 0.5
ABC132	Circuit Breakers and Fuses	National Electrical Code (NEC) requirements, Ground Fault Circuit Interrupters (GFCI), overcurrents, fuse sizing, safety techniques and short-circuit calculations.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.0 1.0
ABC133	Basic Lighting	Principles of illumination and specific light sources. Includes practical applications for residential, commercial and industrial installations	Registered apprentice status or permission of the apprenticeship coordinator.	L+L 1.0 1.0 1.0

ABC135	Fundamentals of Concrete	Materials used to make concrete, including specific types of cement, aggregate, admixtures and reinforcing materials. Handling procedures for concrete, conveying and placing concrete and finishing techniques for concrete slab. Construction of foundations and formwork	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC136	Roof Systems	Defining roof terminology. Identifying and understanding specific roof systems. Using the framing square and essex scale to calculate and measure specific types of rafters. Transcribing and transferring measurements onto rafters. Using "speed square" to determine measurements for specific types of rafters. Defining unequal roof pitch. Identifying specific types of plank and beam roofs and roof trusses used in the industry today.	Prerequisites: (Registered apprentice status and a grade of C or better in ABC/MEC/PNT120) or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
ABC141	SMACNA Manuals and Duct Fab Standards	Standards, codes and ordinances, according to the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) manuals. Operating pressures, specific sealing requirements, connectors, reinforcing/gage requirements, specific seam types for duct fabrication and use of charts and tables	Prerequisites: None.	LEC 0.5 0.5 0.5
ABC142	Alternating Current	Production of electricity, including; current, voltage, induction, mutual inductance and capacitance. Calculations using Ohms Law. Operation of a three phase system.	Prerequisites: (Registered apprentice status and a grade of C or better in ABC/MEC/PED120) or permission of the Apprenticeship Director.	LEC 1.0 1.0 1.0
ABC143	Motors: Theory and Application	Overview of electric motors including types, operation, and applications. Assembly and disassembly. Mounting and connections according to National Electrical Code (NEC). Also troubleshooting, installation and handling	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0

ABC144	Grounding	Types of grounding and proper installation of grounds and grounding. OSHA and National Electrical Code (NEC) requirements specific to grounding. Purpose and operation of Ground Fault Circuit Interrupters (GFCI). Effects of soils and environment. Selection of grounds and grounding material for specific situations. Testing grounds with a "megger"	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC148	Blueprints and Specifications- Sheet Metal	Reading and interpretation of blueprints, specifications and shop drawings. Includes elevations, detail views, section views of electrical, plumbing and mechanical drawings and prints	Prerequisites: None.	LEC 2.0 2.0 2.0
ABC150	Hand and Power Tools and Motorized Equipment	Selection, use and care of hand and power tools specific to the pipefitting trade. Identification, use, safety procedures and maintenance of motorized equipment utilized in pipefitting	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
ABC209	Principles of HVAC and Air Flow	Terminology and components of Heating, Ventilation and Air Conditioning (HVAC) systems and the principles of air flow as applied to HVAC air distribution systems. Also covers the basic refrigeration cycle, components and controls and the introduction to heat pumps	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
ABC210	Steam Traps	Use of steam traps in high and low pressure steam systems. Specific types and applications, installation, troubleshooting and maintenance	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5

ABC213	Specialty Piping and Hot Taps	Specialty piping including flared and compression joining. Identifying, sizing and installing fittings. Brazing and soldering, calculating and bending pipe. Glass lined pipe, also hydraulic fitted compression joints and grooved pipe systems. Hot taps including identification and abatement of hazards, types and installation of fittings, hot tap machines and stopples	Prerequisites: Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 2.0 4.0 4.0
ABC221	Motors and Motor Controls	Electrical symbols, line diagrams and logic. Contactors and starters, control devices, reversing circuits and power distribution systems. Electronic control devices, programmable controllers, reduced voltage starters, accelerating and decelerating methods and circuits. Preventive maintenance and trouble shooting	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 3.0 3.0 3.0
ABC222	Hazardous Locations-Electrical	Hazardous location classifications. Equipment approved for use in specific hazardous locations. Wiring methods	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC223	Electrical Distribution Systems	Distribution systems, electrical drawings and identification of electrical symbols. National Electrical Code (NEC) regulations governing distribution systems. High and low voltage portions of distribution systems. Component connection, transformer operation and calculation of transformer sizes and maximum loads for Open-Delta systems. Practical applications for capacitors and rectifiers. Calculation of power factor of electrical circuits and trouble shooting	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
ABC224	Electricity of HVAC Systems	Introduction to heating and air conditioning. Principles of heating and cooling. Operation and installation of equipment used for heating and cooling. National Electrical Codes (NEC) requirements. Safety precautions, testing and trouble shooting specific systems	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0

ABC225	Overcurrent Protection and Conductors	Understanding, defining and using overcurrent protection including: terminology, safety factors, conformance to National Electrical Code, fuses, circuit breakers, short circuits, selection and sizing of overcurrent protection. Proper selection and calculation of conductors including an understanding of National Electrical Code requirements and conductor types and purposes.	Prerequisites: (Registered apprentice status and a grade of C or better in ABC132) or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
ABC226	Raceways, Wiring Devices, Boxes and Fittings	Sizing, selecting, and installing raceways, junction boxes, outlet boxes and wiring devices. Calculating fill requirements according to National Electrical Code (NEC) regulations. Calculating bending radii in boxes and cabinets. Types and purpose of wiring devices and calculating maximum loads on such devices	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
ABC230	Stair Construction	Stair parts, materials and types. Stair dimensions and practical techniques for stair layout. Rough forming methods.	Prerequisites: (Registered apprentice status and a grade of C or better in ABC/MEC/PNT120) or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
ABC231	Exterior Wall Finishes	Exterior wall finish work; placement and hanging of windows, siding and flashing for walls. Installation of floors, chimneys and insulation included	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 3.0 3.0 3.0
ABC238	Advanced Walls, Floors and Ceilings	Identification and installation of specific types of walls, floors and ceilings. Required tools and materials. Safety stressed	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC239	Cabinetry	Construction of cabinets including: terminology, tools, safety, types of wood, glues, joints, layout, cutting, assembly, hardware, plastic laminates and installation procedures	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0



ABC251	Advanced Trade Calculations- Pipefitter	Thermal expansion and the use of tables of equivalents and conversion tables. Right angle trigonometry and calculation of take-outs using trigonometry	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC254	Field Routing, Trim and Springs	Field run specifications, rigging equipment needs, load weights, assembly systems and support needs. Also includes fabricating field run piping, vessel trim and identifying, selecting and installing spring can supports	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 2.0 2.0 2.0
ABC256	Basic Plumbing	Plumbing fixtures, drainage fixture unit ratings, and installation procedures. Includes procedures for installing fixtures, water heaters, shower and bath units, and dishwashers. Safety stressed.	Prerequisites: None.	L+L 4.0 4.0 4.0
ABC265	Welding Machines	Specific types of welding machines, electrical characteristics, operation, NEC applications and grounding. Also hazards, overcurrent protection and sizing grounding electrodes	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
ABC266	Basic Electronic Theory	Electronic system components. Solid state devices and component materials. Transistor types and functions, schematics and diagrams. Light Emitting Diodes (LEDs), and Silicon Controlled Rectifiers (SCRs). Operating principles of integrated circuits and basic operational amplifier circuits	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
ABC267	Specialty Lighting and Signaling Systems	Calculations for installation and measuring of specialty lighting and signaling systems according to National Electrical Code (NEC) standards. Includes decorative, roadway and sign lighting. Also fire alarm and security systems. Troubleshooting and maintenance	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0

ABC269	HVAC Controls and Heat Tracing	Heating, ventilation and air conditioning (HVAC) control systems including temperature sensing devices, control components, National Electrical Code (NEC) requirements, solid state controls, packaged HVAC units, programmable controllers and installation procedures. Heat tracing and freeze protection including explanation of use, types of systems, installation procedures, inspection and maintenance and NEC requirements	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC276	Lamps, Ballasts and Components	Incandescent, tungsten halogen, florescent, and high-intensity discharge (HID) lamps. Voltage, watts, lumens, and lamp life. Fluorescent, electronic, and HID ballasts. Automatic lighting, occupancy sensors, photo sensors, and timers. Troubleshooting and energy management systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
ABC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

ABC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ABC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ABO103	Introduction to Auto Body Repair	An introduction to basic auto body repair skills in dent removal. This course includes body filler application and sanding, plastic repair, metal repair, welding, plasma cutting, collision estimating, and air conditioning refrigerant recovery.	Prerequisites: None.	164
ABO104	Introduction to Automotive Refinishing	An introduction to basic refinishing skills with dual and single stage paints. This course includes spray equipment setup, panel prep and tape, paint correction with cut and buffing, scratch repair and proper blending techniques, basic knowledge of toners and paint mixing.	Prerequisites: None.	164

ABO203	Advanced Automotive Body Repair	An advanced course in non-structural auto body repair. This course includes disassembly of a vehicle, development of a collision repair plan, and repair. Includes body filler application and sanding, plastic repair, metal repair, and welding.	Prerequisites: None.	200
ABO204	Advanced Refinishing Fundamentals	An advanced course in vehicle refinishing and reassembly. This course includes spray equipment setup, vehicle prep and tape, paint correction with cut and buffing, scratch repair and proper blending techniques, knowledge of toners and paint mixing.	Prerequisites: None.	200
ABS171	Introduction to Good Manufacturing Practices(GMP)-Regulated Manufacturing	Course is designed to provide individuals with an overview of Good Manufacturing Practices (GMP), their application in a variety of industries and the opportunities for in such fields.	Prerequisites: None.	LEC 3.0 3.0 3.0
ABS173	Basic Instrumentation and Lab Math	Introductory course covering basic equipment, measurements, and calculations used in biotechnology laboratories.	Prerequisites: None. BIO156 or BIO181 recommended.	LEC 1.0 1.0 1.0
ABS174	BioSafety	General laboratory safety, hazardous chemical use and disposal, biohazardous material use and disposal, biosafety procedures, and radiation safety.	Prerequisites: None.	LEC 1.0 1.0 1.0
ABS175	Research Methods in Biology	Fundamentals of planning and conducting biological experiments, including ones that simultaneously vary multiple experimental variables. Subsequent analysis, interpretation, and reporting of results.	Prerequisites: None. BIO156 or BIO181 recommended.	L+L 1.0 2.0 2.0

ABS274	Introduction to Wildlife Management	Introduction to the field of wildlife biology/management and the legal, cultural, ecological, and population dynamics of wildlife biology and management. Covers wildlife management objectives, management techniques, research techniques, and the organizational environment that wildlife biologists work in; provides an overview of careers in the field and guidance in planning a career.	Prerequisites: High school biology with a grade of C or better or a grade of C or better in BIO100 or BIO181 or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
ACC105	Payroll, Sales and Property Taxes	Tax reporting for payroll, sales, and personal property	Prerequisites: None.	LEC 3.0 3.0 3.0
ACC107	Bookkeeping Theory and Practice	Fundamental accounting practices; application to retail stores, professional firms, and personal service operations.	Prerequisites: None.	L+L 4.0 5.0 5.0
ACC109	Accounting Concepts	Introduction to accounting with emphasis on analysis and applications of financial information.	Prerequisites: None. GBS151 and reading ability equivalent to RDG100 or RDG100LL suggested but not required.	LEC 3.0 3.0 3.0
ACC110	Understanding and Using Accounting Systems	Develops basic comprehension of the balance sheet, income statement, and equity and cash flow statements. Explores usage of specialized journals and subsidiary ledgers in a computerized system. Studies the impact of various transactions on an enterprise, including payroll, receivables, payables, inventory, cash and credit card receipts	Prerequisites: None.	L+L 3.0 3.0 3.0
ACC111	Accounting Principles I	Fundamental theory of accounting principles and procedures	Prerequisites: None.	LEC 3.0 3.0 3.0
ACC112	Accounting Principles II	Continuation of the fundamental theory of accounting principles and procedures, including interpretation of general purpose financial statements.	Prerequisites: A grade of C or better in ACC111 or permission of Department or Division.	LEC 3.0 3.0 3.0

ACC115	Computerized Accounting	Understanding of fundamental accounting principles and mastery of an accounting information systems including the general ledger, accounts receivable, accounts payable and payroll.	Prerequisites: None.	L+L 3.0 3.0 3.0
ACC121	Income Tax Preparation	Preparation of and practical experience in preparing individual Federal income tax returns using computer software.	Prerequisites: None.	L+L 3.0 3.0 3.0
ACC125	Understanding Financial Statements	Interpretation and utilization of financial data	Prerequisites: A grade of C or better in ACC112 or ACC211 or permission of Department or Division.	LEC 3.0 3.0 3.0
ACC211	Financial Accounting	Introduction to theory and practice in the preparation and interpretation of general purpose financial statements.	Prerequisites: None.	LEC 3.0 3.0 3.0
ACC212	Managerial Accounting	Development and analysis of accounting information for managerial planning and control	Prerequisites: A grade of C or better in (ACC111 and ACC112) or ACC211 and (CIS105 or permission of Department or Division).	LEC 3.0 3.0 3.0
ACC215	Governmental and Not-For-Profit Accounting	Theories and procedures of accounting for governmental and not-for-profit organizations.	Prerequisites: A grade of C or better in ACC112 or ACC211, or permission of Department or Division.	LEC 3.0 3.0 3.0
ACC216	Fraud Examination	Fundamental theory of fraud examination methodology to detect and prevent accounting fraud.	Prerequisites: A grade of C or better in (ACC230 or ACC112 or ACC211) or permission of Department or Division.	LEC 3.0 3.0 3.0
ACC219	Intermediate Accounting I	Theory and practice applicable to determination of asset values, liabilities, and related problems of income determination.	Prerequisites: A grade of C or better in ACC212 or ACC240 or permission of Department or Division.	LEC 3.0 3.0 3.0
ACC220	Intermediate Accounting II	Continuation of the theory and practice applicable to liabilities and owner's equity; special problems and financial reporting.	Prerequisites: A grade of C or better in ACC219 or permission of Department or Division.	LEC 3.0 3.0 3.0

ACC221	Tax Accounting	Preparation of and accounting procedures for individuals; introduction to partnerships and corporate tax structures	Prerequisites: A grade of C or better in ACC111 or ACC211 or permission of Department or Division.	LEC 3.0 3.0 3.0
ACC222	Payroll Accounting	Payroll records for businesses required by federal and state laws	Prerequisites: A grade of C or better in ACC111 or ACC211 or permission of Department or Division.	LEC 3.0 3.0 3.0
ACC224	Tax Practice Administration and Business Entity Analysis	Federal income tax representation, practices and procedures; designed for students who desire to become an Enrolled Agent (EA): this course contains the material a student would need to master in order to pass the third part of the EA exam, which is administered by the Internal Revenue Service of the United States of America. This course also contains content for the second part of the EA exam not covered in ACC221 Tax Accounting.	Prerequisites: A grade of C or better in ACC121.	LEC 3.0 3.0 3.0
ACC230	Uses of Accounting Information I	Introduction to the uses of accounting information for internal and external purposes with emphasis on financial statement analysis.	Prerequisites: A grade of C or better in ACC111 or ACC211 or (ENG101 and MAT151 and CRE101) or appropriate test scores on the District English, Reading and Math placement exams.	LEC 3.0 3.0 3.0
ACC240	Uses of Accounting Information II	Introduction to the uses of accounting information for internal and external purposes with emphasis on analysis for use by management.	Prerequisites: A grade of C or better in ACC230.	LEC 3.0 3.0 3.0
ACC250	Introductory Accounting Lab	Procedural details of accounting for the accumulation of information and generation of reports for internal and external users.	Prerequisites: None.	LAB 1.0 3.0 3.0

ACC260	Certified Bookkeeper (CB) Preparation	Fundamental accounting practices including accrual and deferral adjustments, correcting common transaction recording errors, bank reconciliations and adjusting entries. Includes payroll accounting and related Federal and State payroll law requirements. Accounting for depreciation for financial and tax accounting purposes covered. Inventory valuation methods. Includes calculating, recording, and reporting under generally accepted accounting principles (GAAP). Preventive internal control procedures to detect organizational fraud, theft, and embezzlement covered.	Prerequisites: A grade of C or better in ACC111 or ACC211 or (bookkeeping experience and permission of Instructor).	LEC 3.0 3.0 3.0
ACC270AA	Accounting Internship	Accounting work experience in a business or industry. Eighty hours of designated work per credit per semester.	Prerequisites: Permission of Department or Division.	LAB 1.0 1.0 0.0
ACC270AB	Accounting Internship	Accounting work experience in a business or industry. Eighty hours of designated work per credit totaling 160 hours per semester.	Prerequisites: Permission of Department or Division.	LAB 2.0 2.0 0.0
ACC270AC	Accounting Internship	Accounting work experience in a business or industry. Eighty hours of designated work per credit totaling 240 hours per semester.	Prerequisites: Permission of Department or Division.	LAB 3.0 3.0 0.0
ACC282AA	Volunteerism Accounting: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: A grade of C or better in ACC111 or (ACC230 and ACC250) and permission of Instructor.	LAB 1.0 1.0 0.0
ACC282AB	Volunteerism Accounting: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: A grade of C or better in ACC111 or (ACC230 and ACC250) and permission of Instructor.	LAB 2.0 2.0 0.0
ACC282AC	Volunteerism Accounting: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: A grade of C or better in ACC111 or (ACC230 and ACC250) and permission of Instructor.	LAB 3.0 3.0 0.0



ACC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ACC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 5.0 0.0
ACC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

ACC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
ACC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ACC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ACC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ACT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ACT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ACT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ADA102	Advertising Production Methods	Production procedures for publications and other print media. Layout and sizing ads, type specification, meeting deadlines, proofreading symbols, and mechanical separation for color and tone. Practice with copy proofs and camera-ready pasteups	Prerequisites: None.	L+L 3.0 4.0 4.0
ADA109	Cartooning Methods	Production of cartoon drawing suitable for reproduction and submission to publishers. Introduction to greeting card design, editorial cartooning, comic strips and other uses of cartoons	Prerequisites: None.	L+L 3.0 4.0 4.0
ADA114	Graphics Printing Processes	Printing methods, skill development in planning and layout, composition methods, proofing and correction, color process, image carrier preparation.	Prerequisites: None.	L+L 3.0 4.0 4.0
ADA169	2D Media Design	Generation of two-dimensional (2D) images, designs, and media using digital and traditional methods of visual problem solving. Understanding digital and design-based techniques and workflows.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ADA175	Electronic Publishing Design I	Introduction to the multiple elements of commercial publishing using the microcomputer. Basic foundation in the use of electronic page layout techniques. Emphasis on publication design layout and concepts.	Prerequisites: A grade of C or better in ART100 or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0

ADA177	Digital Photographic Imaging I	Introduction to multiple elements of digital imaging. Basic foundation in photographic manipulation of images, with special attention to aesthetic foundations underlying photographic composition.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ADA183	Digital Graphic Arts I	Graphic design use in microcomputer; black and white graphics, standard and color brushes, lines, shapes, area fills and fonts. Application to illustration, advertising graphics, typography, and video interaction.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ADA184	Digital Animation I	The art of animation (animated sequences, special effects, titles, etc.) using the computer. Construction characters, background graphics, color, scaling, storyboard, cells, timing, editing, and surface rendering. Screening and discussion of selected animated short films and videos.	Prerequisites: A grade of C or better in (ART111 or ART116) or permission of Instructor. Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ADA203	Creative Design for Advertising	Focuses on the design and production of advertisement layouts and visual marketing campaigns for digital, mobile, and social channels which drive business objectives. Emphasis on terminology, analysis, and critique of advertising design, campaign methods, techniques, and the use of video across digital, mobile, and social channels.	Prerequisites: A grade of C or better in ART104 or permission of Instructor.	L+L 3.0 6.0 6.0
ADA248	Design Self Promotion	Defining career goals, and developing a self-promotional marketing plan to enter the workplace, including a resume, business card, leave behind, social media presence, interactive portfolio and printed portfolio. Understand business ethics and etiquette, artist's rights, copyright laws and contractual agreements, and develop networking, interview and communication skills.	Prerequisites: None.	L+L 3.0 6.0 6.0

ADA283	Digital Graphic Arts II	Advanced skill development of graphic design through use of microcomputer. Emphasis on computer design and techniques for producing all types of camera-ready advertising art for printed matter and package design. Includes illustration, typography, photo imaging, and color separation.	Prerequisites: A grade of C or better in ADA/ART183 or permission of Instructor.	L+L 3.0 6.0 6.0
ADA289	Computer Illustration	Introduction to the multiple elements of commercial illustration using the microcomputer. Basic foundation in the use of computer techniques including color paint and draw programs for the production of commercial illustrations for publications and printed matter. Use of and output devices.	Prerequisites: A grade of C or better in ART100 or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ADA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ADA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ADA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AEN100	Survey of Alternative Energy	Basic principles and history of alternative energy sources. Alternative energy sources highlighted include solar photovoltaic, solar thermal, wind, hydropower and geothermal. Emphasis on local power facilities utilizing alternative energy sources.	Prerequisites: None.	L+L 2.0 2.0 2.0
AEN102	Fundamentals of Facility Energy Management	Process of evaluation of types of energy use. Evaluation of the structure, energy transfer, lighting, heating, and cooling systems. Introduction to basic thermal process, including thermal capacity, heat transfer modes, psychometric charts, fan and pump laws, energy storage, and other factors related to HVAC and occupant comfort in commercial facilities. Includes an introduction to energy generation, construction and equipment, and the impact of these factors on cost and economic justification.	Prerequisites: None.	LEC 4.0 4.0 4.0

AEN103	Hand Tools and Basic Maintenance for Building Energy Technicians	Basic tools and equipment for the building energy technician. Includes an overview of electrical theory and procedures for measurement and evaluation of common electric circuits, specific heating, ventilation, and air conditioning (HVAC) mechanical hardware devices, analysis of building environmental conditions, and safe procedures for starting and stopping equipment and systems. Also addresses basic repair and replacement of electric outlets, fuses, breakers, filters, and necessary diagnostics on related electrical and mechanical items.	Prerequisites: None.	L+L 4.0 4.0 4.0
AEN104	Fundamentals of Residential Energy Auditing	Process of evaluation of types of energy. Evaluation of the structure, windows and doors, insulation values and types, heating and cooling systems, water heating types and usage.	Prerequisites: None.	LEC 3.0 3.0 3.0
AEN142	Introduction to Energy Management	Introduction to building energy management concepts and procedures. Includes the carbon cycle, building envelope and materials of construction in their relation to energy management, occupant comfort, and indoor air quality. Major emphasis on identification of building system components, relations, interactions and basic operation, evaluation and reporting of energy trending and consumption, and efficiency.	Prerequisites: A grade of C or better in AEN102, AEN103 and CNS182.	L+L 3.0 3.0 3.0
AEN190	Device Interface and Selection	Overview of building management systems, components, and controls. Includes energy consumption basics and measurement in addition to building systems evaluation. Also covers the process for evaluation and documentation of systems as well as recommendations for potential energy conservation.	Prerequisites: A grade of C or better in AEN142 and (MAT112 or MAT122).	L+L 3.0 5.0 5.0



AES101	Air Force Today I	Survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills. The Leadership Laboratory component provides dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes common Air Force customs and courtesies, drill and ceremonies, health and physical fitness through group participation.	Prerequisites: None.	LEC 2.0 1.0 0.0 LAB 0.0 1.0 0.0
AES103	Air Force Today II	Introduce students to the United States Air Force and encourage participation in Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: introduction to leadership, Air Force core values, introduction to interpersonal communication and team building, and a continuation of communication skills. The Leadership Laboratory component provides dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes learning the environments and dynamics of an Air Force officer.	Prerequisites: None.	LEC 2.0 1.0 0.0 LAB 0.0 1.0 0.0

AES201	Evolution of USAF Air and Space Power I	Focuses on facilitating the transition from Air Force ROTC cadet to Air Force ROTC candidate. Examines the general aspects of air and space power through a historical perspective. Utilizing this perspective, covers a time period from the first balloons and dirigibles to the modern technology currently used in overseas contingency operations. Featured topics include: Air Force heritage, Air Force leaders, introduction to ethics and values, group leadership problems and continuing application of communication skills. The Leadership Laboratory component provides dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Provides application of advanced drill and ceremonies; issuing commands; knowing flag etiquette; and developing, directing, and evaluating skills to lead others.	Prerequisites: None.	LEC 2.0 1.0 0.0 LAB 0.0 1.0 0.0
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AES203	Evolution of USAF Air and Space Power II	Provides knowledge-level understanding for general element and employment of air and space power. Furthermore, discusses the importance of Air Force Core Values with use of operational examples and historical Air Force leaders. Continues to develop communication skills. Topics include: the Air Force mission and organization, modern joint expeditionary Airmen, officer opportunities, and professionalism. The Leadership Laboratory component provides dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes preparation for field training.	Prerequisites: None.	LEC 2.0 1.0 0.0 LAB 0.0 1.0 0.0
AES294	Air Force Physical Fitness	Physical training component of Air Force ROTC. Covers topics of immediate or special interest to a faculty member and students.	Prerequisites: None.	L+L 1.0 3.0 0.0
AES298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: None.	LAB 1.0 1.0 0.0

AES298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: None.	LAB 2.0 2.0 0.0
AES298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: None.	LAB 3.0 3.0 0.0
AET100	Aviation Orientation	Exploration of career options and employment practices in the aviation industry, including topics such as academic requirements, employment requirements, regulatory issues, and airport procedures.	Prerequisites: None.	LEC 1.0 1.0 1.0
AET101	Private Pilot Ground School, FAR Part 61	Federal Aviation Regulation (FAR) Part 61 ground school in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate written examination. Includes aerodynamics, airplane systems, airports, airspace, communications, federal aviation regulations, weather, navigation, airplane performance, flight planning, and flight physiology	Prerequisites: None.	LEC 5.0 5.0 5.0

AET107	Private Pilot Ground School	Ground school in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate written examination. Includes aerodynamics, airplane systems, airports, airspace, communications, Federal Air Regulations, navigation, airplane performance, flight planning, and flight physiology. Requires passing a written exam similar to the FAA Private Pilot written exam	Prerequisites: None. Corequisites: AET110.	LEC 5.0 5.0 5.0
AET107HH	Private Pilot Ground School: Helicopter	Ground school in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate written examination. Includes aerodynamics, helicopter systems, airports, airspace, communications, Federal Air Regulations, navigation, helicopter performance, flight planning, and flight physiology. Requires passing a written exam similar to the FAA Private Pilot written exam.	Prerequisites: None. Corequisites: AET110HH.	LEC 5.0 5.0 5.0
AET110	Private Pilot Flight	Flight course in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate practical examination. Includes preflight preparation and planning, ground operations, airport operations, departures, navigation, basic instrument flight, night flight, slow flight, ground reference maneuvers, emergency operations, and arrivals. Approximately 50 hours airplane flight experience at student`s expense required. Requires passing check ride similar to the FAA Private Pilot check ride.	Prerequisites: None. Corequisites: AET107.	LAB 1.0 5.0 5.0

AET110HH	Private Pilot Flight: Helicopter	Flight course in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate practical examination. Includes preflight preparation, preflight procedures, airport and heliport operations, hovering maneuvers, takeoffs, landings, and go-rounds, performance maneuvers, navigation, emergency operations, night operations, and post-flight procedures. Approximately 75-85 hours helicopter flight experience at student's expense required. Requires passing check ride similar to the FAA Private Pilot check ride.	Prerequisites: None. Corequisites: AET107HH.	LAB 2.0 5.0 5.0
AET112	Private Pilot Flight -Test Course	Flight course in preparation for transition into continued AET course work. Includes preflight preparation and planning, ground operations, airport operations, departures, navigation, basic instrument flight, slow flight, ground reference maneuvers, emergency operations, and arrivals. Requires passing check ride similar to the Federal Aviation Administration Private Pilot check ride.	Prerequisites: FAA Private Pilot Airplane Single-Engine Land or advanced certification. Corequisites: AET107.	LAB 2.0 5.0 5.0
AET115	Aviation Meteorology	Meteorology for professional pilots. Includes atmosphere, air mass circulation, cloud type identification, weather hazards, and high altitude, Arctic, and tropical weather systems. Basic forecasting, use of Direct User Access Terminal (DUAT) systems and reading and interpreting weather charts	Prerequisites: None.	LEC 3.0 3.0 3.0

AET201	Instrument Rating Ground School, FAR Part 61	Federal Aviation Regulation (FAR) Part 61 ground school in preparation for the Federal Aviation Administration (FAA) Instrument rating written examination. Includes instrument, navigation, and engine indication systems; airspace; Federal Aviation Regulations applicable to instrument flight; weather, air traffic control procedures; and charts and approach plates. Flight planning, operations, and physiology.	Prerequisites: A grade of C or better in AET101 or FAA Private Pilot Certificate or permission of Instructor.	LEC 3.0 3.0 3.0
AET203	Basic Airplane Systems	Beginning commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examination. Discussions will include, but not be limited to reciprocating engines, engine systems, airplane systems, altitude systems, and commercial regulations.	Prerequisites: A grade of C or better in (AET207, AET217, and AET210) or permission of Instructor. Corequisites: AET220 and AET213.	LEC 3.0 3.0 3.0
AET203HH	Basic Helicopter Systems	Beginning commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examination. Discussions will include, but not be limited to reciprocating engines, engine systems, helicopter systems, altitude systems, and commercial regulations.	Prerequisites: A grade of C or better in AET207HH, AET217HH and AET210HH or permission of Instructor. Corequisites: AET220HH and AET213HH.	LEC 2.0 2.0 2.0
AET205	Aircraft Structures, Systems, and Maintenance	Survey of airframe structures, systems, and maintenance regulations for pilots. Includes aircraft and airfoil design and construction, and electrical, instrumentation, and automatic flight control systems. Maintenance privileges and limitations, and forms and records	Private Pilot Certificate or permission of Instructor.	LEC 4.0 4.0 4.0

AET207	Attitude Instruments and Navigation	Beginning instrument pilot ground course in preparation for the Federal Aviation Administration (FAA) Instrument Pilot Rating and Instrument Rating written examinations. Includes preflight preparation, flight instruments, basic attitude instrument flying, radio navigation systems, and technically advanced aircraft systems.	Prerequisites: A grade of C or better in AET110 or permission of Instructor. Corequisites: AET210 and AET217.	LEC 3.0 3.0 3.0
AET207HH	Attitude Instruments and Navigation: Helicopter	Beginning instrument pilot ground course in preparation for the Federal Aviation Administration (FAA) Instrument Pilot Rating and Instrument rating written examinations. Includes preflight preparation, flight instruments, basic attitude instrument flying, radio navigation systems, and technically advanced helicopter systems.	Prerequisites: A grade of C or better in AET110HH or permission of Instructor. Corequisites: AET210HH and AET217HH.	LEC 2.0 2.0 2.0
AET208	Aviation Safety	Introduction to aviation safety, including aviation safety programs, risk management, pilot psychology, physiology, human factors, and accident review and investigation.	Prerequisites: A grade of C or better in AET107.	LEC 3.0 3.0 3.0
AET210	Instrument Commercial Flight I	Initial flight course in preparation for the Federal Aviation Administration (FAA) Instrument rating practical examination. Emphasis on night and instrument operations. Student must fly approximately 60 hours at own expense. Requires passing operational phase checks.	Prerequisites: A grade of C or better in AET110 or permission of Instructor. Corequisites: AET207 and AET217.	LAB 1.0 5.0 5.0
AET210HH	Instrument Flight: Helicopter	Initial helicopter flight course in preparation for the Federal Aviation Administration (FAA) Instrument rating practical examination. Emphasis on helicopter instrument operations. Student must fly approximately 75 hours at own expense. Requires passing operational phase checks.	Prerequisites: A grade of C or better in AET110HH or permission of Instructor. Corequisites: AET207HH and AET217HH.	LAB 2.0 5.0 5.0



AET213	Aerodynamics and Performance	Advanced commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examinations. Includes discussion of aerodynamic factors including lift, weight, drag, and thrust. Discussions will include, but are not limited to aerodynamics, performance, safe and efficient airplane operations, airplane stability and control, stalls, and spins.	Prerequisites: A grade of C or better in AET207, AET217 and AET210. Corequisites: AET220 and AET203.	LEC 3.0 3.0 3.0
AET213HH	Aerodynamics and Performance: Helicopter	Advance commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examinations. Includes discussion of aerodynamic factors including lift, weight, drag, and thrust. Discussions will include, but are not limited to aerodynamics, performance, and safe and efficient helicopter operations.	Prerequisites: A grade of C or better in AET207HH, AET217HH, and AET210HH. Corequisites: AET220HH and AET203HH.	LEC 2.0 2.0 2.0
AET215	Aircraft Powerplants	Survey of engines and engine systems for pilots. Includes theory and analysis of reciprocating and turbine aircraft engines. Lubrication, ignition, fuel control, cooling, exhaust, and propellers.	Prerequisites: A grade of C or better in AET205 or permission of Instructor.	LEC 4.0 4.0 4.0
AET217	Instrument Procedures	Advanced instrument pilot ground school course in preparation for the Federal Aviation Administration (FAA) Instrument pilot rating and Instrument rating written examinations. Includes Federal Aviation Regulations, instrument approach procedures, and instrument enroute considerations. Requires passing written exam similar to the Instrument pilot rating and Instrument rating written exams.	Prerequisites: A grade of C or better in AET110 or permission of Instructor. Corequisites: AET210 and AET207.	LEC 3.0 3.0 3.0

AET217HH	Instrument Procedures: Helicopter	Advance helicopter instrument pilot ground school course in preparation for the Federal Aviation Administration (FAA) Instrument pilot rating and Instrument rating written examinations. Includes Federal Aviation Regulations, instrument approach procedures, and instrument enroute considerations. Requires passing written exams similar to the Instrument pilot rating and Instrument rating written exams.	Prerequisites: A grade of C or better in AET110HH or permission of Instructor. Corequisites: AET210HH and AET207HH.	LEC 2.0 2.0 2.0
AET220	Instrument Commercial Flight II	Advanced flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot practical examination. Emphasis on commercial and high performance operations. Student must fly approximately 60 hours at own expense. Requires passing instrument rating and commercial pilot stage checks similar to the FAA check rides.	Prerequisites: A grade of C or better in AET210, AET207 and AET217. Corequisites: AET203 and AET213.	LAB 1.0 5.0 5.0
AET220HH	Commercial Flight: Helicopter	Advanced flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot practical examination. Emphasis on commercial and high performance helicopter operations. Student must fly approximately 60 hours at own expense. Requires passing instrument rating and commercial pilot stage checks similar to the FAA check rides.	Prerequisites: A grade of C or better in AET210HH, AET207HH and AET217HH. Corequisites: AET203HH and AET213HH.	LAB 2.0 5.0 5.0

AET225	Advanced Aircraft Systems	Survey of advanced aircraft systems to include electrical, automatic flight control, pressurization, cabin atmosphere, ice control, rain control, fire detection and extinguishing. Includes theory and analysis of turbine aircraft engines. Introduction to turbine engine systems to include lubrication, ignition, fuel control, cooling, exhaust, and propellers. Includes overview of maintenance publications, forms and records.	Prerequisites: Private Pilot Certificate or permission of Instructor.	LEC 4.0 4.0 4.0
AET227	Certified Flight Instructor: Airplane, Single Engine Land Ground School	Ground school in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor and Fundamentals of Instruction written examinations. Includes fundamentals of instruction, aerodynamics, airplane performance, systems, operations, weight and balance, weather, federal regulations, navigation, maneuvers, pilot physiology, ethics, and aeronautical decision making. Requires passing written exams similar to the FAA Certified Flight Instructor: Airplane, and Fundamentals of Instruction written exams.	Prerequisites: A grade of C or better in AET240 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET230.	LEC 5.0 5.0 5.0
AET227HH	Certified Flight Instructor: Helicopter Ground School	Ground school in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor and Fundamentals of Instruction written examinations. Includes fundamentals of instruction, aerodynamics, helicopter performance, systems, operations, weight and balance, weather, federal regulations, navigation, maneuvers, pilot physiology, ethics, and aeronautical decision making. Requires passing written exams similar to the FAA Certified Flight Instructor: Helicopter, and Fundamentals of Instruction written exams.	Prerequisites: FAA Commercial Pilot Certificate. Corequisites: AET230HH.	LEC 4.0 4.0 4.0

AET228	Public Safety Aviation	Organization, operations, tactics and techniques related to air support operations within law enforcement, fire protection and resource protection agencies. Includes Use of Unmanned Aircraft System (UAS) within the United States, Airborne law enforcement patrol, surveillance and other special operations; fire operations including fire chemistry and behavior, fire department organization and tactics, airborne firefighting equipment, fire extinguishment tactics and air ambulance operations; and, resource protection air operations including wildlife surveys, hunting and fishing enforcement patrols, search and rescue, and operations from unimproved landing sites and seaplane operations.	Prerequisites: A grade of C or better in AET107 and AET110. Corequisites: AET260.	LEC 3.0 3.0 3.0
AET229	Crew Resource Management	Crew communications, teamwork, leadership, "followership," decision-making, and situational awareness; also the benefits of diversity, and the role diversity plays in the modern aerospace industry. Emphasis on utilization of all available resources in order to conduct a safe and efficient flight.	Prerequisites: A grade of C or better in AET217.	LEC 3.0 3.0 3.0

AET230	Certified Flight Instructor: Airplane, Single Engine Land	Flight course in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor: Airplane practical examination. Emphasis on demonstration and analysis of flight maneuvers. Includes preflight, ground operations, airport operations, takeoffs, climbs, flight fundamentals, stalls, spins, slow flight, basic instrument operations, performance maneuvers, ground reference maneuvers, emergency operations, approaches, landings, and postflight procedures. Requires approximately 25 hours of flight that includes high performance operations at student's expense. Also requires passing check ride similar to the FAA Certified Flight Instructor check ride.	Prerequisites: A grade of C or better in AET240 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET227.	LAB 1.0 3.0 3.0
AET230HH	Certified Flight Instructor: Helicopter	Flight course in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor: Helicopter practical examination. Emphasis on demonstration and analysis of flight maneuvers. Includes preflight procedures, airport and heliport operations, hovering maneuvers, takeoffs, landings, and go-arounds, fundamentals of flight, performance maneuvers, emergency operations, special operations, and postflight procedures. Requires approximately 60 hours of flight at student's expense. Also requires passing check ride similar to the FAA Certified Flight Instructor check ride.	Prerequisites: FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET227HH.	LAB 1.0 3.0 3.0
AET237	Multiengine Airplane Pilot Ground School	Aeronautical knowledge necessary to meet requirements for a multiengine airplane rating including orientation, aerodynamics, airplane systems, airplane performance, flight planning, and emergency procedures.	Prerequisites: A grade of C or better in AET220 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET240.	LEC 2.0 2.0 2.0

AET240	Multiengine Airplane Pilot Flight	Flight course in preparation for the Federal Aviation Administration (FAA) Multi-engine Airplane practical examination. Approximately 15 hours of flight experience at the student's expense and passing check ride similar to the FAA Multi-engine check ride are required.	Prerequisites: A grade of C or better in AET220 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET237.	LAB 1.0 1.5 1.5
AET257	Readings in Aviation	Critical inquiry of a particular aviation theme from a wide variety of sources. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. International data communication facilities and equipment made available for student use.	Prerequisites: A grade of C or better in ENG102 or ENG111 and permission of Instructor.	L+L 3.0 4.0 4.0
AET258	Certified Flight Instructor: Instrument Airplane Ground School	Aeronautical knowledge and practical teaching ability necessary to obtain an Instrument Flight Instructor Certificate with an Airplane-Single-Engine rating and necessary to satisfactorily pass the Flight Instructor Instrument knowledge test.	Valid FAA Commercial Pilot Certificate or Airline Transport Pilot Certificate with the appropriate category and class of airplane used in the course, instrument rating, and Flight Instructor Certificate-Airplane. Corequisites: AET270.	LEC 3.0 3.0 3.0
AET258HH	Certified Flight Instructor: Instrument Helicopter, Ground School	Aeronautical knowledge and practical teaching ability necessary to obtain an Instrument Flight Instructor Certificate with a Helicopter rating and necessary to satisfactorily pass the Helicopter Flight Instructor Instrument knowledge test.	Valid FAA Commercial Pilot Certificate, or Airline Transport Pilot Certificate with instrument rating and the appropriate category and class of helicopter used in the course; and Flight Instructor Certificate-Helicopter. Corequisites: AET270HH.	LEC 3.0 3.0 3.0

AET260	Public Safety Aviation Applications in Unmanned Aircraft Systems Flight Lab	Knowledge and skills needed to safely employ small unmanned aircraft systems. Includes aircraft operating software, launch and recovery operations, payload operations, normal and emergency procedures, and mission planning and execution. Emphasis on use of small Unmanned Aircraft Systems (UAS) operations conducted by non-military governmental organizations, such as law enforcement and resource protection agencies. Students must complete the appropriate flight lessons to satisfactorily complete the course.	Prerequisites: A grade of C or better in UAS101. Corequisites: AET228.	LAB 1.0 3.0 3.0
AET270	Certified Flight Instructor: Instrument Airplane Flight Lab	Flight experience in an airplane to meet flight proficiency and aeronautical experience requirements necessary to add an Instrument Airplane Rating to an existing Flight Instructor-Airplane certificate.	Valid FAA Commercial Pilot Certificate or Airline Transport Pilot Certificate with the appropriate category and class of airplane used in the course, instrument rating, and Flight Instructor Certificate-Airplane. Corequisites: AET258.	LAB 1.0 3.0 3.0
AET270HH	Certified Flight Instructor: Instrument Helicopter Lab	Flight experience in a helicopter designed to provide flight proficiency and aeronautical experience requirements necessary to pursue adding an Instrument Helicopter Rating to an existing Flight Instructor-Helicopter certificate.	Valid FAA Commercial Pilot Certificate, or Airline Transport Pilot Certificate with instrument rating and the appropriate category and class of helicopter used in the course; and Flight Instructor Certificate-Helicopter. Corequisites: AET258HH.	LAB 1.0 3.0 3.0
AET273	Multi-Engine Flight Instructor: Airplane-Ground School	Aeronautical knowledge and practical teaching necessary for the addition of a multi-engine rating Flight Instructor Certificate, as set forth in the current Private and Commercial Multi-Engine and Flight Instructor Multi-Engine Practical Test Standards.	(Valid FAA Commercial Pilot Certificate or Airline Transport Pilot Certificate with instrument rating and the appropriate category and class of airplane used in the course) and Flight Instructor Certificate-Airplane. Corequisites: AET280.	LEC 2.0 2.0 2.0

AET280	Multi-Engine Flight Instructor: Airplane-Flight Lab	Flight experience in an airplane to meet flight proficiency and aeronautical experience requirements necessary to add a multi-engine rating to an existing Flight Instructor-Airplane certificate.	(Valid FAA Commercial Pilot Certificate or Airline Transport Pilot Certificate with instrument rating and the appropriate category and class of airplane used in the course) and Flight Instructor Certificate-Airplane. Corequisites: AET273.	LAB 1.0 3.0 3.0
AET290	Flight Physiology	In-depth study of aeromedical factors for pilots. The causes, symptoms, prevention, and treatment of flight environment disorders, altitude effects, spatial disorientation, visual illusions, body heat imbalance, and psychological factors are included as they relate to pilot performance and survival. Two altitude chamber flights at the student's expense are required.	Prerequisites: Current FAA (Federal Aviation Administration) medical certificate.	LEC 3.0 3.0 3.0
AET296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0



AET296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
AET296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
AET296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

AET298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AET298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
AET298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AFR110	Introduction to African-American Studies	Introduction to the study of the African-American experience. Interdisciplinary approach includes historical underpinnings; population and cultural characteristics; social, economic, and political issues; and implications for the future	Prerequisites: None.	LEC 3.0 3.0 3.0

AFR202	Ethnic Relations in the United States	Basic concepts and processes, including historic overview, of interethnic relations in the United States: culture, race, ethnicity, ethnocentrism, prejudice, discrimination, racism, assimilation, acculturation, and individual and group responses to interethnic contact. Cultural knowledge and intercultural communication skills and perspectives as fundamental tools for successful management of social relations in a multicultural world.	Prerequisites: None.	LEC 3.0 3.0 3.0
AFR203	African-American History: The Slavery Experience	History and cultural heritage of African-Americans, including arrival in the Americas, chattel slavery experience, emancipation, and participation in the American Civil War. Presented from an Afro-centric perspective.	Prerequisites: A grade of C or better in AFR110 or permission of Instructor.	LEC 3.0 3.0 3.0
AFR204	African-American History: Reconstruction to the Present	History and cultural heritage of African-Americans from the Reconstruction period to the present, including the Depression, the Harlem Renaissance, the Civil Rights Movement, and affirmative action. Presented from an Afro-centric perspective.	Prerequisites: A grade of C or better in AFR203 or permission of Instructor.	LEC 3.0 3.0 3.0
AFR207	Black Women	Analysis and discussion of critical issues for Black women in America today	Prerequisites: None.	LEC 3.0 3.0 3.0
AGB130	Establishing and Running an Agribusiness	Basic principles used in establishing and running an Agribusiness. Emphasis on business requirements to maintain a business enterprise in Arizona	Prerequisites: None.	LEC 3.0 3.0 3.0
AGB132	Agribusiness and Management	Application of management principle skills in day-to-day operations for decision-making techniques base on collection, use and analysis of financial, employee, and customer data to determine and evaluate the daily operations of an agribusiness venture.	Prerequisites: None.	LEC 3.0 3.0 3.0

AGB139	Agribusiness Computer Operations	Agribusiness operations for solving, forecasting and projecting agribusiness problems, agribusiness communications, accounting systems and database use.	Prerequisites: None.	L+L 3.0 6.0 6.0
AGB140	Commercial Floral Design	Fundamentals of commercial floral design. Includes instruction and hands-on training in fresh, dried, and silk plants, flowers, and greens; materials; supplies; gift items; and industry conditions, standards, and trends. Covers design principles, identification, selection, care, maintenance, handling, and use of floral design material, ordering, pricing, recordkeeping, computer usage, and customer relations.	Prerequisites: None.	L+L 3.0 5.0 5.0
AGB142	Floriculture	Principles and species of floriculture. Includes instruction in cultural and production requirements of cut flowers and foliage. Covers general production information and basic plant physiology principles, propagation, production temperatures, plant nutrients, pest management, and greenhouse construction and operations.	Prerequisites: None.	L+L 3.0 5.0 5.0
AGB144	Agriculture Processing	Agricultural processing and the meat industry as a business enterprise. Carcass evaluation, grading, judging for cut ability and quality, cut identification, meat cutting, wrapping, freezing, and storing.	Prerequisites: None.	L+L 3.0 5.0 5.0
AGB229	Landscape Management and Leadership	Covers landscape and nursery management concepts and applications for business, industry, and government organizations	Prerequisites: None.	LEC 3.0 3.0 3.0

AGB231	Marketing of Agricultural Products	Principles of agricultural marketing including consumer demand, economic system fundamentals, functions and methods of marketing agricultural commodities, market planning, and promoting and selling in the agricultural domain.	Prerequisites: None.	LEC 3.0 3.0 3.0
AGB260	Youth Leadership Development	Characteristics of effective Career and Technical Student Organization (CTSO) officers, leadership styles and strategies for the management and organization of youth groups in agriculture. Includes instruction and hands-on training in speech/workshop development, budget and activity planning and the use of parliamentary procedure.	Prerequisites: None.	L+L 4.0 6.0 6.0
AGB261	Advanced Youth Leadership Development	Characteristics of effective Career and Technical Student Organization (CTSO) officers, leadership styles and strategies for the management and organization of youth groups in agriculture. Includes instruction and hands-on training in speech/workshop development, budget and activity planning and the use of parliamentary procedure.	Prerequisites: None.	L+L 4.0 6.0 6.0
AGB290	Internship	Supervised field training for Agribusiness students with local industry businesses.	Student shall be in final semester before graduation and permission of Department or Division.	LAB 3.0 6.0 6.0

AGB296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
AGB296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
AGB296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

AGB296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
AGB298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AGB298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

AGB298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AGL181	Landscape Construction Techniques	The methods used in site preparation, installation of edgings, construction of walks, patios and decks, installation of sprinkler systems, rock scapes and the planting of trees, shrubs, ground covers, and lawns.	Prerequisites: None.	L+L 3.0 6.0 6.0
AGL184	Landscape Drafting and Design I	Basic principles of landscape design, including drafting and design techniques commonly used in the field of landscaping. Emphasis on simple working drawings and detailed views, symbols, lettering, and drafting standards.	Prerequisites: None.	L+L 2.0 4.0 4.0
AGL188	Arizona Landscape Design	Designed for residential homeowner and beginning professional. Emphasis on plant material groupings and basic design principles. History of landscape use, special features of hardscapes, irrigation systems, and lawn-to- desert planting conversion techniques.	Prerequisites: None.	L+L 2.0 3.0 3.0



AGL189	Landscape Design I	Introduction to landscape design with an emphasis on residential and small scale projects. Application of design processes from inventory and analysis through design and development including program, measured base, study diagrams, rendered and colored plans, and sectional elevations. Architectural communication developed through hand sketch and hand drafting techniques with practice in client interview and design presentation.	Prerequisites: None.	L+L 3.0 6.0 6.0
AGL190	Landscape Design II	Advanced study of the principles, processes, and practice of Landscape Design, with an emphasis on residential and small scale design. Design problem-solving, use of landscape elements such as paving, fencing, small structures, low voltage lighting, plants, water and fire features. Construction documents will be produced including plans, estimates, details, and specifications. Regulatory agencies and other affective influences will be explained. Development of personal design philosophy and career exploration.	Prerequisites: A grade of C or better in AGL189 or permission of Instructor.	L+L 3.0 6.0 6.0
AGL269	Computer Aided Landscape Design	Using AutoCAD to create landscape design drawings and wire frames in Sketchup for elevations, sections and perspective sketches.	Prerequisites: A grade of C or better in (AGB139 or CAD100 or CAD101) and AGL189 or permission of Instructor.	L+L 3.0 6.0 6.0

AGL296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
AGL296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
AGL296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

AGL296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
AGL298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AGL298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

AGL298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AGS164	Plant Growth and Development	Principles of growth in relation to seed germination, emergence, growth and reproduction processes of plants and the environmental influences on plant growth processes.	Prerequisites: None.	L+L 4.0 6.0 6.0
AGS165AA	Fall Sustainable Crop Production	Study of the importance of Fall-planted crops for food, feed, and fiber. Cultural practices for raising the major crops in the State of Arizona, including planting, environmental modifications, harvesting, handling and quality control with an emphasis on sustainability.	Prerequisites: A grade of C or better in AGS164 or permission of Instructor.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AGS165AB	Spring Sustainable Crop Production	Study of the importance of Spring-planted crops for food, feed, and fiber. Cultural practices for raising the major crops in the State of Arizona, including planting, environmental modifications, harvesting, handling and quality control with an emphasis on sustainability.	Prerequisites: A grade of C or better in AGS164 or permission of Instructor.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AGS166	Aquaponics	Establishment, care, and selection of facilities for commercial production of animals and plants in a water-based closed system.	Prerequisites: None.	L+L 3.0 5.0 5.0
AGS168	Grounds Equipment Management	Selection, use and maintenance of grounds equipment, including both manual and power equipment.	Prerequisites: None.	L+L 3.0 5.0 5.0

AGS170	Pesticides	Chemistry and classification of pesticides. Interpret the use of pesticide labels	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS171	Insect Identification	Concepts of insect identification	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS172	Household Pests	Problems associated with household pests	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS173	Wood Destroying Pests	Problems associated with wood destroying pests	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS174	Regulations: Federal and State	Federal and state pesticide regulations and guidelines for licensing pest control use	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS175	Pesticide Safety and Use of Equipment	Federal and state pesticide safety regulations and use of equipment	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS176	Environment and Toxicology of Pesticides	Environmental concepts, endangered species and toxicology associated with the use of pesticides	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS177	Aquatic Pest Control	Aquatic ecosystems, pest organisms and their control	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS178	General Pest Control	Arthropods and other pest organisms and their control	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS179	Terrestrial Weed Control	Terrestrial weeds and their control	Prerequisites: None.	LEC 0.5 0.5 0.5
AGS182	Gardening Practices and Techniques	Cultural practices of vegetables, fruits and ornamental plants as they relate to organic and inorganic gardening	Prerequisites: None.	LEC 2.0 2.0 2.0
AGS182AA	Gardening Practices and Techniques	Cultural practices of vegetables, fruits and ornamental plants as they relate to organic and inorganic gardening	Prerequisites: None.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
AGS183	Urban Plant Identification and Use	Identification, growth, cultural requirements, uses, maintenance, and care of landscape trees, shrubs, vines and ground covers commonly used in Arizona	Prerequisites: None.	LEC 3.0 3.0 3.0
AGS183AA	Urban Plant Identification and Use: Trees	Emphasis on trees commonly used in cityscapes in the Southwest. Review of their origin, cultural requirements, uses, required maintenance, benefits and disadvantages. Identification, planting procedures, water and nutritional requirements are covered	Prerequisites: None.	LEC 1.0 1.0 1.0

AGS183AB	Urban Plant Identification and Use: Shrubs	Emphasis on shrubs commonly used in cityscapes in the Southwest. Review of their origin, cultural requirements, uses, required maintenance, benefits and disadvantages. Identification, planting procedures, water and nutritional requirements are covered	Prerequisites: None.	LEC 1.0 1.0 1.0
AGS183AC	Urban Plant Identification and Use: Vines, Flowers, Groundcovers	Emphasis on groundcovers, annuals, perennials and vines commonly used in cityscapes in the Southwest. Review of their origin, cultural requirements, uses, required maintenance, benefits and disadvantages. Identification, planting procedures, water and nutritional requirements covered	Prerequisites: None.	LEC 1.0 1.0 1.0
AGS186	Greenhouse Management and Construction	Principles and practices of greenhouse operation; control of environmental factors and cultural practices affecting the production of greenhouse crops	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AGS186AA	Greenhouse Management and Construction	Principles and practices of greenhouse operation; control of environmental factors and cultural practices affecting the production of greenhouse crops	Prerequisites: None.	LEC 3.0 3.0 3.0
AGS187	Indoor Foliage Plants	Environmental and nutritional requirements for foliage plants used for interior decoration. Includes identification, nomenclature and uses	Prerequisites: None.	LEC 3.0 3.0 3.0
AGS188	Arid Landscape Plants	Provides information on currently propagated Xerophytes available in southern Arizona. Shows how each can be applied to specific desert landscape situations. Considers identification, cultural requirements, and physical characteristics related to landscape design	Prerequisites: None.	LEC 3.0 6.0 5.1

AGS190	Arid Land Plants Identification and Use	Covers xerophytes common in southern Arizona and their applications to specific desert landscape situations. Identification, cultural requirements, and physical characteristics related to landscape design, including both mature plants and live containerized material	Prerequisites: None.	LEC 3.0 3.0 3.0
AGS192	Urban Plant Care	Establishment, care and preservation of ornamental trees, shrubs, vines, and ground cover plants used in landscape for human well-being and pleasure.	Prerequisites: None.	L+L 3.0 5.0 5.0
AGS192AA	Urban Plant Care: Site Analysis, Plant Selection and Requirements	Establishment of ornamental trees, shrubs, vines, and ground cover plants used in landscape for human well-being and pleasure	Prerequisites: None.	LEC 1.0 1.67 1.46
AGS192AB	Urban Plant Care: Maintenance of Urban Plants	Care of ornamental trees, shrubs, vines, and ground cover plants used in landscape for human well-being and pleasure	Prerequisites: None.	LEC 1.0 1.67 1.46
AGS192AC	Urban Plant Care: Diagnosing and Curing Plant Problems	Preservation of ornamental trees, shrubs, vines, and ground cover plants used in landscape for human well-being and pleasure	Prerequisites: None.	LEC 1.0 1.67 1.46
AGS255	Plant Tissue Culture	Plant tissue culture techniques for cloning, reproduction, and manufacturing including media mixing, cell growth and development, aseptic transfer, manipulation, observation, and documentation	Prerequisites: A grade of C or better in AGS164.	L+L 3.0 5.0 5.0
AGS260	Soils	Fundamental properties of the physical, chemical, and biological relation of soil to plant growth. Evaluation of the human impact on soil health.	Prerequisites: A grade of C or better in CHM130 or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
AGS261	Soil Fertility And Management	Relationship of soils, crops, and climatic factors to economic use of commercial fertilizer	Prerequisites: None.	LEC 3.0 3.0 3.0

AGS262	Irrigation Design, Installation, Operation, and Trouble Shooting	Design, installation, maintenance and troubleshooting of sprinklers, drip, and flood systems. Use of time clocks, pumps, filters, backflow devices, and other equipment to deliver water to the landscape. Types of water and their use in the landscape.	Prerequisites: None.	L+L 3.0 5.0 5.0
AGS264	Irrigation and Water Management	Irrigation and drainage problems relating to pumps, motors, pipe lines, ditches and wells in the Southwest. Installation of sprinkler, drip and subirrigation, time clock installation and repair. Land measurement and principles of land leveling	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AGS266	Urban Insect Control	The interrelationship of plant organisms, animals and environments with insects as affected by soils, temperature, water and agricultural chemicals	Prerequisites: None.	LEC 3.0 3.0 3.0
AGS267	Weeds and Plant Diseases of Arizona	Weed identification, relationship to competition, cultural practices, prevention and chemical usage for control. General outline of plant autonomy and physiology relating to chemical usage of selectivity. Diseases of plants, their life cycles, biological interrelationships, identification, and control.	Prerequisites: None.	L+L 3.0 5.0 5.0
AGS268	Integrated Pest Management in the Cultivated Environment	Identification and management of pests of the garden, farm and landscape in the arid west. Special emphasis is given to safe handling of pesticides.	Prerequisites: None.	L+L 4.0 6.0 6.0
AGS282AA	Service-Learning Experience in Agriculture	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
AGS282AB	Service-Learning Experience in Agriculture	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
AGS282AC	Service-Learning Experience in Agriculture	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0



AGS284	Lawn and Turf Care	Factors that affect the establishment and maintenance of turf grasses. Includes budgets, schedules and selection of equipment	Prerequisites: None.	LEC 3.0 3.0 3.0
AGS285	Propagation of Horticultural Plants	Principles and processes of propagation of crops using seed, budding, grafting, and cuttings in greenhouse structures and open ground	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AGS285AA	Propagation of Horticultural Plants Structures Media and Management	Design, maintenance and repair of greenhouse structures. Principles of plant propagation media and procedures. The processes involved in nursery management, including plant care, display, and marketing	Prerequisites: None.	LEC 1.0 0.7 0.7 LAB 0.0 1.0 1.0
AGS290	Internship	Supervised field training for Urban Horticulture students with local industry businesses	Student shall be in final semester before graduation and permission of Department or Division.	LAB 3.0 6.0 0.0
AGS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

AGS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
AGS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
AGS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

AGS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AGS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
AGS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AHU245	Arabic Culture and Islam	A survey of Arab heritage in the Arab world (Middle East). Cultural and social institutions and their contribution to the development of the region and its heritage.	Prerequisites: None.	LEC 3.0 3.0 3.0

AIR101	Reservations and Sales Overview	Overview concepts of reservations and sales for airline booking agents. Includes guidelines on dealing with people with disabilities, reservations for cabin pets, and military fares. Introduction to fare displays and booking rules	Prerequisites: None.	LEC 2.0 2.0 2.0
AIR102	Reservations/Sales Training I	Basic orientation to Reservations/Sales Training. Includes overview of product knowledge, computer familiarization, the Passenger Name Record, sales, and fares	Prerequisites: None.	LEC 3.0 3.0 3.0
AIR103	Basic Reservations Procedures	Basic orientation to Reservation/Sales training. Includes product knowledge, computer system, seat assignment, and baggage restriction transit item classifications, automated check-in and passenger acceptance procedures	Prerequisites: None.	LEC 3.0 3.0 3.0
AIR104	Reservations/Sales Training II	Concepts and techniques of specialty faring, special sales tools, miscellaneous functions, and the Passenger Name Record	Prerequisites: A grade of C or better in AIR102.	LEC 3.0 3.0 3.0
AIR105	Automated Ticketing	Introduction to automated ticketing procedures. Payment procedures also included. Overview of baggage processes and checking in passengers	Prerequisites: A grade of C or better in AIR104.	LEC 3.0 3.0 3.0
AIR106	Reservations/Sales Training III	Expands on concepts and techniques of reservations/sales. Includes expanded miscellaneous functions and introduces advanced seat assignments, vacation packages, and ticketing	Prerequisites: A grade of C or better in AIR104.	LEC 3.0 3.0 3.0
AIR107	Reservations and Sales Customer Service	Customer service and communication skills for airline booking agents. Includes selling, listening, and appropriate language usage. Covers emergency communication procedures and retention skills.	Prerequisites: None.	L+L 3.0 4.0 4.0

AIR108	Reservations/Sales Training Practicum	Practical experience attending to passenger needs by answering "live" phone calls in a laboratory setting. Includes The Sales Effort, Mandatory Parts of a Call, Phone Etiquette, and Building the Passenger Name Record.	Prerequisites: A grade of C or better in AIR106.	LAB 3.0 9.0 9.0
AIR109	Dividend Miles Preferred	Overview of preferred program features and benefits. Includes database access, account actions, and screen usage in addition to procedures for reactivation and preservation of mileage. Also covers maintenance and helpdesk procedures.	Prerequisites: None.	L+L 2.0 3.0 3.0
AIR110	Advanced Reservations/Sales Training	Emphasis on attending to passenger needs by answering "live" phone calls in a laboratory setting. Includes sales, mandatory parts of a call, phone etiquette, and information retrieval.	Prerequisites: A grade of C or better in AIR102.	L+L 2.0 4.0 4.0
AIR112	Airline Ticketing Procedures	Overview of ticketing procedures. Fares, payment options, passenger name record, and sales covered. Automated and basic ticketing as well as hazardous material transport restrictions emphasized	Prerequisites: A grade of C or better in AIR103.	LEC 3.0 3.0 3.0
AIR113	Automated Ticketing and Check-In	Introduction to automated ticketing and check-in options and procedures including entries, fares, opening a flight, assigning seats or changing seat assignments on the computer, processing standbys, and closing the flight	Prerequisites: A grade of C or better in AIR102.	LEC 3.0 3.0 3.0
AIR115	Ticketing/Passenger Services	Basic orientation to ticketing and passenger services. Includes procedures for accepting passengers, baggage services, common hazardous materials encountered, and basic ticketing procedures	Prerequisites: A grade of C or better in AIR113.	LEC 3.0 3.0 3.0

AIR116	Airline Gate Procedures	Airline gate service operation information. Opening a flight, assigning and changing seats, processing standbys, and closing a flight emphasized. Processing oversold flights and irregular operations also covered	Prerequisites: A grade of C or better in AIR103.	LEC 3.0 3.0 3.0
AIR118	Emergency Medical Procedures	Overview of emergency medical procedures. Includes basic first aid, advanced first aid, choking victim procedure, cardiopulmonary resuscitation, and operation of Automated External Defibrillators (AED).	Prerequisites: None.	LEC 2.0 2.0 2.0
AIR120	Airbus A319/320 Initial Training	Initial inflight training of the Airbus A319/320. Includes Airbus A319/320 aircraft familiarization, duties and procedures, and security training.	Prerequisites: A grade of C or better in AIR118.	LEC 3.0 3.0 3.0
AIR121	Airline Cargo Services	Overview of airline cargo service procedures for the airline cargo agent. Includes Cargo Name Records (CNRs), cargo security, air waybills, shipments, and cargo allocation. Airline cargo computer system usage emphasized.	Prerequisites: None.	L+L 2.0 3.0 3.0
AIR122	Airbus A319/320 Emergency Procedures	Overview of emergency procedures aboard the Airbus A319/320 Aircraft. Includes Airbus A319/320 general emergency procedures, specific emergency procedures, evacuation procedures, and protective breathing equipment.	Prerequisites: A grade of C or better in AIR120.	LEC 2.0 2.0 2.0
AIR123	Baggage Service Agent	Overview of the role and responsibilities of a baggage service agent. Covers procedures for delayed and damaged baggage, as well as customer concerns. Emphasis on working with a computerized baggage trace system.	Prerequisites: None.	LEC 1.0 1.0 1.0
AIR124	Boeing 757 Transition Training	Inflight transition training of the Boeing 757. Includes Boeing 757 aircraft familiarization, duties and procedures, and emergency procedures	Prerequisites: A grade of C or better in AIR122.	LEC 2.0 2.0 2.0

AIR125	Boeing 737 Transition Training	Inflight transition training of the Boeing 737 for new hires. Instruction includes Boeing 737 aircraft familiarization, general operations, and aircraft specific emergency equipment/procedures.	Prerequisites: A grade of C or better in AIR122.	LEC 1.0 1.0 1.0
AIR127	Airline Customer Relations I	Overview of airline customer relations and the passenger name record. Includes policies and procedures as well as reservations, routing, coding, and travel awards.	Prerequisites: None.	LEC 3.0 3.0 3.0
AIR128	Airline Customer Relations II	Advanced airline customer relations. Communication skills for effective customer service, as well as, techniques to assist with customer checklist, travel vouchers, and service requests. Airline ticketing systems and flight operations included.	Prerequisites: A grade of C or better in AIR127.	L+L 3.0 4.0 4.0
AIR129	Airline Customer Relations Lab	Application of airline customer relations procedures. Use of airline computer systems emphasized. Includes customer service and the processing of tickets, coding, reservations, files, and vouchers.	Prerequisites: A grade of C or better in AIR128.	LAB 2.0 6.0 6.0
AIR130	Vacation Travel Product Knowledge	Vacation travel product knowledge for Tour Sales Representatives. Includes overview of vacation travel product knowledge, vacation travel packages, product polices, and travel destinations.	Prerequisites: None. Corequisites: AIR132, AIR134 and AIR136.	L+L 3.0 5.0 5.0
AIR131	Ramp Team Lead	Overview of ramp team lead position for airline employees. Covers safety and emergency procedures, gate management, and computer procedures. Includes central load planning, aircraft structural and performance limits as well as Dispatch Ramp History (DRH).	Prerequisites: None.	L+L 1.0 1.0 1.0
AIR132	Tour Sales Computer Systems	Overview of computer systems for Tour Sales Representatives. Includes computer familiarization, Direct Reference System (DRS), and Tour Record Locator (TRL).	Prerequisites: None. Corequisites: AIR130, AIR134 and AIR136.	L+L 2.0 4.0 4.0

AIR134	Tour Sales Techniques	Sales techniques for Tour Sales Representatives. Emphasis on sales techniques for vacation tour packages.	Prerequisites: None. Corequisites: AIR130, AIR132 and AIR136.	L+L 2.0 4.0 4.0
AIR136	Vacation Travel Booking Procedures	Vacation Travel Booking Procedures for Tour Sales Representatives. Includes computer system screens, and procedures for building a complete vacation tour package.	Prerequisites: None. Corequisites: AIR130, AIR132 and AIR134.	L+L 4.0 6.0 6.0
AIR140	Ramp Safety Procedures	Basic ramp safety procedures for airline employees. Topics include ramp environment, engine safety, equipment malfunctions, vehicle operations and Foreign Object Damage (FOD) control. Procedures for arrival, turnaround and departure conditions and hazards covered. Hand signals and other non-verbal communications as well as back injury prevention and hearing conservation techniques included	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
AIR142	Aircraft Dynamics	Overview of ground procedures for airline employees. Covers aircraft familiarization, engine safety, ramp servicing and baggage handling as well as prearrival, arrival, predeparture and departure procedures. Rules for handling air cargo, human remains and U.S. Mail included	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
AIR146	Aircraft Load Planning	Overview of aircraft load planning operations. Topics include weight and balance, preplanning, load planning, as well as load planning coordinator responsibilities. Computer usage also included	Prerequisites: None.	LEC 1.0 1.0 1.0
AIR150	Introduction to International Sales	International booking agent responsibilities. Includes geographical indicators and international carriers as well as cultural overview of Mexico and Canada	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0



AIR151	International Reservations and Sales	Overview of international airline reservations and sales. Includes baggage regulations, international fares, and stored fare data. Covers frequent flyer club enrollment procedures.	Prerequisites: None.	L+L 3.0 4.0 4.0
AIR152	International Operations and Programs	Overview of international operations and programs for airline booking agents. Includes ground operations, check-in procedures, international baggage charges as well as international fares for children and conditions for unaccompanied children. Rules and restrictions of various international travel programs also covered.	Prerequisites: Permission of Department or Division.	L+L 4.0 6.0 6.0
AIR154	International Reservations and Fares	International fares, global pricing and international taxation rules. Also includes procedures for creating the passenger name record, stored fare data, and prepaids for international travel	Prerequisites: Permission of Department or Division.	LEC 4.0 4.0 4.0
AIR160	Reservation/Booking Procedures	Overview of reservation/booking procedures. Includes use of availability displays, seating assignments, ticketing procedures and fare rules as well as fare pricing and selling. Communication skills also covered	Prerequisites: None.	LEC 3.0 3.0 3.0
AIR161	Airline Reservations System	Practical application of a travel booking procedures using a computerized reservations system. Covers codes, Passenger Name Record, ticketing and reservations.	Prerequisites: A grade of C or better in AIR160 or Corequisites: AIR160 or permission of Instructor.	L+L 2.0 3.0 3.0
AIR163	Advanced Airline Reservations	Rules, restrictions, and procedures for handling special reservations situations. Covers Bonus Travel Certificates (BTC), Virtual Coupon Records (VCR), and the Special Travel Account Record System (STARS). Also includes procedures for managing codeshare accounts and mileage plans.	Prerequisites: A grade of C or better in AIR160 or Corequisites: AIR160 or permission of Instructor.	L+L 2.0 3.0 3.0

AIR164	Airline Ticket Reissues	Rules, restrictions, and procedures for completing reissues. Includes voluntary and automated reissues as well as fare calculation. Also covers collections and verification processes.	Prerequisites: None.	LEC 3.0 3.0 3.0
AIR165	Overview of Flight Schedules/Itineraries	Basic reservation information including flight schedules, itineraries, and fares. Handling travel agent calls also covered	Prerequisites: None.	LEC 3.0 3.0 3.0
AIR169	Basic International Travel	Overview of basic international travel. Includes rules, regulations, documentation requirements, and taxes	Prerequisites: None.	LEC 1.0 1.0 1.0
AIR170	International Air Transport Association Geography	Overview of world geography according to the International Air Transport Association (IATA). Includes world traffic area divisions, sub areas and office responsibilities. Also covers atlas reading including location of countries, major cities and grids in addition to use of city codes.	Prerequisites: None.	LEC 1.0 1.0 1.0
AIR171	International Air Transport	International air reservations procedures. Includes Passenger Name Record (PNR) creation and modification as well as use of availability displays and international itineraries. Covers preferred programs and partnerships.	Prerequisites: None.	LEC 3.0 3.0 3.0
AIR172	International Fares	Overview of international fares. Includes fare basis codes, combinability and construction. Also covers transpacific routing and electronic tickets as well as procedures for completing international reissues.	Prerequisites: None.	LEC 1.0 1.0 1.0
AIR173	International Air Transport Lab	Practical application of international air reservations procedures. Includes Passenger Name Record (PNR) creation and modification as well as use of availability displays and international itineraries.	Prerequisites: None.	LAB 2.0 6.0 6.0

AIR190	Ground Security Coordinator	Overview of airline security procedures. Includes responsibilities of security screeners and supervisors. Also covers procedures to conduct passenger, baggage and cargo security screening, requirements for security notifications, and contacting law enforcement officials. Procedures for various security concerns including bomb threats and hijacking as well as screening technologies for detecting and tracing explosives included	Prerequisites: None.	LEC 2.0 2.0 2.0
AIR191	Airline Customer Complaint Resolution	Knowledge on the Air Carrier Access Act (ACAA) for airline complaint resolution agents. Covers mission and purpose of the ACAA, as well as in-depth information on Part 382 of the Act. Examines the complaint resolution process and strategies to communicate with people with disabilities	Prerequisites: Permission of Department or Division.	LEC 0.5 0.5 0.5
AIS101	Survey of American Indian Issues	Introduction to critical issues related to American Indian peoples. Examines cultural, political, economic, educational, social, and environmental issues. Focuses on contemporary issues and factors influencing American Indian communities.	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS103	Introduction to Indigenous Cultures	Introduction to political, economic and social structures of indigenous peoples. Examines the impact on indigenous peoples of contact with non-indigenous cultures.	Prerequisites: None.	LEC 1.0 1.0 1.0
AIS105	Introduction to American Indian Studies	Introduction to political, economic, and social structures of American Indian Nations. Provides overview of American Indian tribal cultures prior to contact, the impact of European contact, and the influence of western social systems on tribal nations.	Prerequisites: None.	LEC 3.0 3.0 3.0

AIS110	Navajo Government	Addresses and examines major historical developments of the Navajo People with a focus on government, law, society, livelihood, tradition, and culture. Includes the major components and operation of Navajo government and related tribal laws, such as Title II and Title VII of the Navajo Nation Code, as well as the significance of the Treaty of 1868. Federal Indian policies and their impact on Navajo society and government, the importance of federal and tribal citizenship and related federal and tribal laws, and the role of the Navajo clanship system and other relevant cultural concepts addressed	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS112	American Indian Policy	Reviews United States government policies and their impact on American Indian sovereignty. Examines historic, legal, economic, and social issues regarding Indian policies and how they impact Indian Nations and individual Indians. Studies historical as well as contemporary policies created by the Federal Government that define the trust relationship between the United States government and Indian Nations	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS113	Proposal Writing	Provides an overview of funding sources for grants. Reviews techniques and skills necessary to develop successful proposals. Focuses on the design and writing of a complete grant proposal related to a selected problem or issue.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0

AIS140	American Indian History	Survey of American Indian history with emphasis on the last 200 years including developments in the 20th century. Focuses on selected groups such as the Cherokee, Iroquois Confederation, Navajo, Sioux and Indians of the Southwest in relation to cultural, economic, political and social continuity and changes. Topics include development and influence of federal policies, past and present issues confronting Native Americans and how Native American individuals and communities maintain their identities as they confront social changes	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS141	Sovereign Indian Nations	Explores the sovereign status of American Indians as it relates to social relationships, traditions, and culture of American Indians. Reviews historic relations with non-Indian societies, the development of federal Indian law, tribal governments and their functions. Examines treaty rights, environmental issues, public policy, economic development, other current issues, and contemporary social problems	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS160	American Indian Law	Analyzes the legal system of the United States Government as it applies to American Indian Nations. Examines how United States legal institutions have impacted Indian sovereignty. Units of analysis include the development of Indian law, United States Supreme Court decisions, Congressional Acts, treaty rights and the development of tribal governments. Focuses on legal institutions that have abridged the property rights of Indian Nations.	Prerequisites: None.	LEC 3.0 3.0 3.0

AIS170	American Indian History of the Southwest	Covers history of Indian peoples in the southwestern United States from pre-Columbian era to the present. Includes historical events, the development and implementation of Spanish-Mexican and United States' policies and their impact on Indian peoples in these areas, and current issues of importance to Indian peoples	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS201	Indigenous Nation Building	Discussion of the relationship between general management issues and their specific application to tribal government situations. Special consideration given to application of management theory and to the unique status and situation of tribal governments.	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS203	Fundamentals of Economic Development for Indigenous Nations	Provides a practical understanding of the economic development process. Examines ways in which development can be initiated and financed. Focuses on how budget systems can be used as management tools. Reviews fundamentals of proposal writing and budget management for grants.	Prerequisites: None.	LEC 3.0 3.0 3.0
AIS213	American Indian Religions	An examination of the historical and cultural background of diverse lifeways and worldviews belonging to the peoples indigenous to the North American continent over time, including a study of modern day American Indian beliefs and practices.	Prerequisites: A grade of C or better in ENG101, or ENG107, or equivalent.	LEC 3.0 3.0 3.0
AIS282AA	Volunteerism for Indigenous Studies	Service-learning field experience within private/public agencies, educational institutions, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
AIS282AB	Volunteerism for Indigenous Studies	Service-learning field experience within private/public agencies, educational institutions, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0

AIS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 1.0 5.0 0.0
AIS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 2.0 10.0 0.0
AIS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 3.0 15.0 0.0

AIS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 4.0 20.0 0.0
AIS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AIS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0



AIS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AIT100	Industrial Safety	Safety requirements for all National Institute for Metalworking Skills (NIMS) duty areas.	Prerequisites: None.	LEC 1.0 1.0 1.0
AIT105	Maintenance Operations	Overview of the area of maintenance operations of a manufacturing facility. Preparation to sit for the NIMS Duty Area 1: Maintenance Operations Certification Exam.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT110	Mechanical Systems	Overview of the area of basic mechanical systems of a manufacturing facility. Preparation to sit for the NIMS Duty Area 2: Basic Mechanical Systems Certification Exam.	Prerequisite: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT115	Hydraulic Systems	Overview of the NIMS areas of hydraulic systems of a manufacturing facility. Preparation to sit for the NIMS Duty Area 3: Basic Hydraulic Systems Certification Exam.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT120	Pneumatic Systems	Overview of the NIMS areas of pneumatic systems of a manufacturing facility. Preparation to sit for the NIMS Duty Area 4: Pneumatic Systems Certification Exam.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0

AIT123	Electrical Wiring J-STD Soldering Certification	This course will prepare the successful student to receive the "Certified IPC Specialist" (CIS) certification from The Institute for Interconnecting and Packaging Electronic Circuits (IPC) in "Requirements for Soldered Electrical and Electronic Assemblies" (IPC J-STD-001). Topics covered and skills to be demonstrated are: soldered wires and terminals, through hole connections, surface mount components, and inspection. Certification is verified by a certified IPC trainer (CIT).	Prerequisites: Permission of Instructor.	L+L 3.0 4.0 4.0
AIT125	Electrical Systems 1	Overview of the area of electrical systems of a manufacturing facility. Preparation to sit for the NIMS Duty Area 5: Electrical Systems Certification Exam.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT128	A-620 Cable and Wire Harness Assembly Certification	This course will prepare the successful student to receive the "Certified IPC Specialist" (CIS) certification from The Institute for Interconnecting and Packaging Electronic Circuits (IPC)/Wire Harness Manufacturer's Association (WHMA) in "Requirements and Acceptance for Cable and Wire Harness Assemblies" (IPC/WHMA-A-620 Certification). Topics covered and skills to be demonstrated are: soldered terminations, crimp terminations, insulation displacement terminations (IDC), splices, connectorization, marking/labeling, coaxial cable assemblies, electrical shielding, wire marking and labeling, and testing methodologies. Certification is verified by a certified IPC trainer (CIT).	Prerequisites: None.	L+L 3.0 4.0 4.0
AIT130	Maintenance Piping	Overview of the area of maintenance of piping systems for manufacturing or industrial facilities. Preparation to sit for the NIMS Duty Area 9: Maintenance Piping Certification Exam.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0

AIT205	Electronic Control Systems 1	Overview of the area of Electronic Control Systems 1 of a manufacturing or industrial facility. Preparation to sit for the NIMS Duty Area 6: Electronic Control Systems Certification Exam.	Prerequisites: A grade of C or better in AIT125, or permission of Instructor.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT210	Electronic Control Systems 2	Overview of the area of Electronic Control Systems 2 of a manufacturing and industrial facility. Preparation to sit for the NIMS Duty Area 6: Electronic Control Systems Certification Exam.	Prerequisites: A grade of C or better in AIT205, or permission of Instructor or Corequisites: AIT205.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT215	Process Control Systems	Overview of the area of Process Control Systems of a manufacturing or industrial facility. Preparation to sit for the NIMS Duty Area 7: Process Control Systems Certification Exam.	Prerequisites: A grade of C or better in AIT125, or permission of Instructor.	LEC 4.0 2.0 2.0 LAB 0.0 4.0 4.0
AIT225	Electrical Systems 2	Overview of the area of electrical systems of a manufacturing facility. Preparation to sit for the NIMS Duty Area 5: Electrical Systems Certification Exam.	Prerequisites: A grade of C or better in AIT125, or permission of Instructor.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT250	Automated Industrial Technology Capstone	An examination of the integration of mechanical, hydraulic, pneumatic, electrical, piping, electronic control, and process control systems. Experience in designing, building, maintaining, troubleshooting, and repairing such integrated systems will be gained.	Prerequisites: A grade of C or better in AIT225, or permission of Instructor or Corequisites: AIT225.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
AIT270	Robotics I	Fundamental principles of working safely with robots, and applications and trends in industrial robotics. Includes types of robots, axes and coordinate systems, programming and operating robots. Incorporates end effectors and collaborative robots.	Prerequisites: A grade of C or better in AIT100 and AIT105.	LEC 3.0 2.0 2.0 LAB 0.0 2.0 2.0
AIT275	Robotics II	Intermediate principles of working safely with robots; robot auxiliary, subsystems, and components. Includes robot maintenance, troubleshooting and repair. Integrates a basic robot design project.	Prerequisites: A grade of C or better in AIT270.	LEC 3.0 2.0 2.0 LAB 0.0 2.0 2.0

AIT276	Robotics Operations and Programming	This course is intended for an operator, technician, or programmer who must setup, record and/or troubleshoot programs on a Handling Tool software package. The course covers the Robot Operations intermixed with the tasks required to set up the Handling Tool application, test run, and refine the program and production setup.	Prerequisites: A grade of C or better in (ATP190, ATP201, and ATP205) or permission of Instructor.	L+L 3.0 6.0 6.0
AIT291	Automated Industrial Technology Internship	Supervised work experience in production environments. Includes experiences in maintenance, troubleshooting, repair of production environment and specific manufacturing processes. Also includes experiences in problem solving; working as a team; soft skills; time and resource management; and exposure to specific manufacturing processes.	Prerequisites: A grade of C or better in AIT225, or permission of Instructor or Corequisites: AIT225.	LAB 3.0 6.0 0.0
AJS100	Police Academy Preparation	Preparation for individuals entering a police academy as well for those who are in the beginning stages of preparing for a career in law enforcement. Includes principles of policing and job responsibilities. Covers expectations of recruits in the areas of academics, physical fitness, mental and emotional preparation. Emphasis on professional and ethical behavior.	Prerequisites: None.	LEC 2.0 2.0 2.0
AJS101	Introduction to Criminal Justice	An introduction to crime and society's responses to it. Examines the nature and causes of crime, the criminal law, constitutional safeguards, and the organization and operation of the criminal justice system including the police, courts, jails, prisons, probation and parole departments, and community corrections agencies. Covers the history of the criminal justice system, terminology and career opportunities.	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS107	Patrol Procedures	Specialized areas of the patrol function, including responding to crowds, riots, bomb threats, intoxication, hazardous materials, fires, and domestic disputes. Partially fulfills Arizona POST (Peace Officer Standards and Training) requirements for proficiency skills academy attendance	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS109	Substantive Criminal Law	Covers philosophy of legal sanctions and historical development from the common law to modern American criminal law, classifications of crimes, elements of and parties to crimes, general definition of crimes, common defenses utilized. Includes specific offenses and the essential elements of each offense.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS110	Law and Legal Review I	In-depth study of the Arizona laws governing arrest by peace officers, as well as, an intensive study of the Arizona substantive criminal law code (ARS Title 13). Focuses on specific sections of ARS Title 4 and ARS Title 8, as they apply to peace officers in Arizona. Partially fulfills the Arizona POST (Peace Officer Standard and Training) Board requirements for Proficiency Skills Academy attendance	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS111	Law and Legal Review II	Study of Arizona laws governing search and seizure, rules of evidence, juvenile laws and procedures, and constitutional law pertaining to law enforcement officers. Course partially fulfills the Arizona POST (Peace Officer Standard and Training) Board requirement for Proficiency Skills Academy attendance	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS112	Wellness for Law Enforcement Officers	The value of physical fitness in law enforcement and the basic elements of strength training, aerobic conditioning, flexibility, nutrition, and back injury prevention	Prerequisites: None.	L+L 3.0 3.0 3.0

AJS113	Criminal Justice Crime Control Policies and Practices	Focus on changing the distribution of crime opportunities rather than offender motivation. Topics include application of situational crime prevention strategies, problem-oriented crime control approaches, hot spots policing, defensible space, and crime prevention through defensible space.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS115	Community Emergency Response Team (CERT): Level I	Basic skills, including instruction in teamwork and disaster simulations, needed to help oneself, family, and neighbors in the event of a community disaster in accordance with the Federal Emergency Management Agency (FEMA) guidelines.	Prerequisites: None.	LEC 1.5 1.5 1.5
AJS116	Crime Prevention	Examines the principles and skills associated with crime prevention. Analyzes the appropriate techniques and strategies police agencies use to operate crime prevention programs.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS119	Computer Applications in Justice Studies	Provides literacy in microcomputer applications in major areas of the criminal justice system. Examines availability and uses of current software packages in criminal justice work. Provides hands-on experience with appropriate integrated software packages pertaining to justice studies.	Prerequisites: None.	L+L 3.0 4.0 4.0
AJS123	Ethics and the Administration of Justice	Introduces and explores ethical issues and the justice system. Focuses on ethics and the law, the police, courts and corrections. Reviews ethical theory, concepts and practices as they relate to administration of justice. Explores issues of how media/social media shape ethics. Encourages critical thinking and value decision making in criminal justice system situations.	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS124	Correctional Institutions	An examination of correctional institutions with an emphasis on personnel and security measures, care and treatment programs and institutional planning. The criminal justice system and matters of custody and treatment. Inmate subcultures, and organized crime in correctional institutions and jails	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS131	Police Management Techniques I	Police supervisory techniques for planning, organization, coordination, reporting, budgeting and handling related personnel problems	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS132	Police Management Techniques II	Management of police personnel including selections procedures, disciplinary practices, public relations, elements of supervision, service ratings, recruiting and probation, and related personnel problems	Prerequisites: A grade of C or better in AJS131 or permission of Instructor.	LEC 3.0 3.0 3.0
AJS137	Public Safety Dispatcher: Basic	Designed to provide in-depth orientation and standardized training of public safety dispatchers within the law enforcement community and familiarize the student with the skills and information important to functioning in a competent, ethical, and professional manner.	Prerequisites: None.	LEC 5.0 5.0 5.0
AJS139	Emergency Response to Terrorism	Fundamentals of emergency response to suspected terrorist events. Historical perspective of terrorist activities and methods by which responders can identify and protect themselves and the public from these threats. Coordination of responding agencies.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS140AA	Patrol Rifle Concepts	Pre-law enforcement employment course relating to how rifles are used in the patrol function	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS140AB	Precision Rifle Concepts	Pre-law enforcement employment class relating to how precision rifles are used in the law enforcement function	Prerequisites: None.	LEC 1.0 1.0 1.0

AJS142	Transportation and Border Security	Basic overview of modern border and transportation security challenges, as well as different methods employed to address these challenges. Historical timeline to present time for transportation-related terrorist threats. Topics associated with border security and security for transportation infrastructure. National and international acts of terrorism, detection of threats to various transportation systems. Interdependency between various agencies to protect borders. Explanation of functions of agencies in border security, as well as effective strategies for agencies to use. Knowledge level understanding of the variety of challenges inherent in transportation and border security.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS143	Intelligence Analysis and Security Management	Basic overview of modern intelligence gathering and analysis pertinent to homeland security and other threats facing government and private sectors. Historical timeline to present time of United States (US) intelligence gathering techniques and agencies. Different agencies tasked with intelligence gathering, and their assigned roles in the government process. Composition of intelligence units as well as the relationship between different agencies and their specialties. Ways in which intelligence is shared to brief policy makers and threats to national security are identified in a timely manner. Techniques and management, as well as the political process and oversight of the intelligence community. Successes and failures of intelligence agencies in modern United States history.	Prerequisites: None.	LEC 3.0 3.0 3.0



AJS145	Criminal Justice System Experiences	Examines the purpose, organization, operation, and employment opportunities of various criminal justice agencies including police departments, crime labs, morgues, courts, juvenile detention facilities, jails, prisons, parole boards, and halfway houses. Includes tours of a variety of criminal justice facilities	Prerequisites: None.	L+L 3.0 3.0 3.0
AJS147	Emergency Preparedness	Emergency preparedness related to natural and manmade disasters. Planning concepts and the planning process; awareness and education programs and strategies for the general community as well as business and industries.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS148	Fundamentals of Emergency Management	Emergency management systems including career opportunities, function, tasks and responsibilities of the emergency management program manager, role of the emergency manager in mitigation, preparedness, response, and recovery. Past civil defense and current emergency management systems since evolution from World War II.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS149	Hazard Mitigation	Knowledge and skills required to develop programs to reduce losses from future disasters, emergencies, and other extreme events caused by natural and man-made hazards.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS150	Defensive Tactics	Skills in the protection against persons armed with dangerous and deadly weapons, demonstration and drill in a limited number of holds and come-alongs, and restraint of prisoners and the mentally ill.	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS151	Firearms I	Moral aspects, legal provisions, safety precautions and restrictions covering the use of firearms, and the firing of sidearms.	Prerequisites: None.	L+L 1.0 1.0 1.0

AJS151AA	Arizona Concealed Weapon Permit	A course meeting the requirements of the State of Arizona for issuance of a concealed weapon permit, including the responsibilities of the firearm owner regarding safety, legal aspects of using force and a demonstration of proficiency	Must be legally able to possess a firearm.	L+L 0.5 0.5 0.5
AJS152	First Aid	Methods for providing emergency medical care to victims of accidents or illness and related safeguards. Includes legal and civil issues, basic functions and major organs of the human body, injury management, resuscitation, movement and extrication of victims	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS153	Firearms II/Handguns	Advanced familiarization with handguns. Variations of basic shooting stance. Legal and moral repercussions of self-defense. Includes range practice.	Prerequisites: A grade of C or better in AJS151 or equivalent certified firearms training as reviewed by the Department.	L+L 1.0 1.0 1.0
AJS154	Firearms III/Long Weapons	Familiarization with different types of long weapons and associated ammunition. Emphasis on safety techniques for use and storage of weapons. Limited use of range for practice	Prerequisites: None.	L+L 1.0 1.0 1.0
AJS155	Concealed Weapons Carry	Training in safe handling and use of handguns. Examines legal provisions related to carrying a concealed weapon; legal and moral implications of self-defense	Prerequisites: None.	L+L 2.0 2.0 2.0
AJS156	Home and Vehicle Personal Defense	Development of personal safety plans, confrontation avoidance, and effective self-defense tactics. Legal and safe use of firearms. Includes range practice	Prerequisites: A grade of C or better in AJS151 or permission of Instructor.	L+L 1.0 1.0 1.0
AJS157	Basic Handgun	Development of the basic knowledge and skills of handgun for self defense.	Prerequisites: A grade of C or better in AJS155 or permission of Instructor.	L+L 2.0 2.0 2.0
AJS158	Concealed Weapon Recertification	Legal provisions, safety precautions and restrictions covering the use of firearms, and the firing of sidearms	Prerequisites: A grade of C or better in AJS151 or AJS155.	L+L 0.25 0.25 0.25

AJS162	Domestic Violence	Explores domestic violence as a social problem within the United States from historical, cultural, political, legal, and law enforcement perspectives. Provides an overview of theories, definitions and causes of, and interventions for domestic violence involving spousal, elder and child abuse along with teen dating violence. Examines the dynamics and effects of domestic violence. Addresses research issues and contemporary domestic violence policy	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS163	Documentation, Collection and Preservation of Track Evidence	Covers proper methods and techniques of locating, documenting, collecting and preserving footwear/tire tread impression evidence and courtroom presentation and defense of such evidence. Discussion of the history of track evidence, digital imaging resolution and other advanced photographic techniques, evidence enhancement and the interpretation of the relationship between the crime scene and evidence location. Numerous practical exercises utilized and implemented to emphasize and critique the skills of the students to properly perform this level of training in footwear and tire track science.	Prerequisites: None.	LEC 2.5 2.5 2.5

AJS164	Examination and Comparison of Footwear Evidence	Overview of the proper methods and techniques in the examination, comparison, and interpretation of footwear evidence. Presentation of history of footwear evidence, footwear construction, foot anatomy, individualizing characteristics of footwear evidence, mold numbering and advanced photographic manipulation of footwear evidence. Discusses proper techniques and methodologies in the examination, interpretation and comparison process. Practical exercises utilized to teach and critique skills of students.	Prerequisites: A grade of C or better in AJS163.	LEC 2.5 2.5 2.5
AJS165	Examination and Comparison of Tire Track Evidence	Overview of proper methods and techniques used in examination, comparison and interpretation of tire track evidence. Discussions of history of tire track evidence, tire manufacturing, terminology, symbols, numbers, tread design and other identifying characteristics. Differences in tire designs and individualizing characteristics, examination and photographic documentation, and enhancement techniques . Practical exercises utilized to teach and critique the skills of the students.	Prerequisites: A grade of C or better in AJS163.	LEC 2.5 2.5 2.5
AJS170	Fire and Arson Investigation for Law Enforcement	An examination of fire and arson investigative techniques along with the motives and pathology of the arsonist and the chemistry of fire. Other topics include documenting the scene, evidence, eliminating accidental causes and surveillance.	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS180	Allied Forensic Science Disciplines	Survey of disciplines that supplement the specialty of forensic science through the examination and interpretation of special types of forensic evidence. Disciplines surveyed include forensic odontology, entomology, archaeology, pathology, biology, engineering, anthropology, psychology/psychiatry, nursing, computing and accounting. Educational requirements and employment prospects for each discipline also explored.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS190	Sex Crimes and Non-Conventional Sexual Behaviors	Examines evolving sexual mores and acts in the United States. Studies processes and procedures involved in labeling sex or sex-related acts as criminal and/or non-conventional. Explores impact of sex crimes on victims and responses by the criminal justice system	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS191	Hate Crimes	Explores the causes, incidence rates and forms of hate crimes in the United States and other countries. Studies hate crime laws and the Constitution. Examines the impact of hate crimes on society, culture and the law. Considers societal responses to combat and prevent hate crimes	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS192	Serial Killers and Mass Murderers	The study of serial killers, mass murderers and their victims. Examines the history and frequency of these crimes, profiles the killers and their victims, explores theories of causation, and discusses the problems and techniques of investigation, prosecution, punishment, and prevention	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS195	International and Domestic Terrorism	An overview of the history, structure, goals, and activities of domestic and international terrorist groups. Explores theories explaining terrorism and reviews methods used to combat it	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS198AB	Special Topics in the Administration of Justice	Explores special topics related to the administration of justice with an emphasis on current issues	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS198AF	Special Topics in the Administration of Justice	Explores special topics related to the administration of justice with an emphasis on current issues	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS200	Current Issues in Criminal Justice	Examines current issues, techniques and trends in the Criminal Justice System.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS201	Rules of Evidence	A practical insight into the rules of evidence to include how to recognize evidence: the general rules governing admissibility of evidence; the hearsay rule and its exceptions; the use of documentary evidence, written memoranda, photographs, recordings and electronic surveillance; corpus delicti; opinion evidence, circumstantial evidence, evidential privileges.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS205	Effective Communication and Report Writing in Criminal Justice	Overview of effective communication for criminal justice agencies. Covers the communication process and flow. Written communication emphasized with report writing, including characteristics of reports and field notes, and the importance and uses of each. Form, style, and procedures for writing various reports, including elements of composition, required substance, proper and improper conclusions, and descriptions of persons and property.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS210	Constitutional Law	An examination of the U.S. Constitution as it relates to the law enforcement function. Includes statutory law and judicial decisions governing the areas of arrest, search and seizure, interrogations and confessions, self-incrimination and other constitutional guarantees. Required in AJS curriculum	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS211	Police Planning	An analysis of the process of planning, and a descriptive study of logical and systematic approaches to strategic, short-range, operational, organizational and tactical planning within a law enforcement organization	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS212	Juvenile Justice Procedures	Examines the nature and extent of juvenile delinquency to the present. Including but not limited to the history, jurisdictions, terminology, procedures, and institutions of the juvenile justice system.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS213	Evidence Technology/Fingerprints	Fundamental principles and processes of fingerprints to include identification, interpretation, and classification. In addition, students will apply fingerprinting latent fingerprint developing, preservation of evidence and the chain of custody.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS213AB	Fingerprint Classification I	Identification of typelines, deltas, and cores. Rules for classification of loops, whorls, and arches.	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS214	Evidence Technology/Photography	The use of photography and other aids in identification and preservation of evidence such as fingerprints, footprints and impressions. Techniques in crime scene and traffic accident photography	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS215	Criminalistics: Physical Evidence	The scientific analysis and examination of physical evidence with emphasis on scientific investigation, recognition, collection, and preservation of evidence. Topics include fingerprints, shoe prints, tool marks, firearms identification, paint chips and arson	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS216	Criminalistics: Biological Evidence	The scientific analysis and examination of biological evidence with emphasis on collection and preservation of evidence. Topics discussed include blood, drugs, blood alcohol, hairs and fibers, and topics of special interest in criminalistics	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS217	Court Procedures	Study of procedures practiced by courts of general and original jurisdiction. Extensive use of mock and moot trial methods used to prepare students in legal research, case preparation and presentation, and adversary hearings.	Prerequisites: None.	L+L 3.0 3.0 3.0
AJS218	Special Investigations: Drugs	Advanced course in the specialized investigation area of drug enforcement. Emphasis on the pharmacological properties of abused drugs, field testing, evidence requirements and specialized investigation techniques utilized in narcotic and dangerous drug investigations	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS219	Crime Scene Technology: Physical Evidence	Scientific analysis and examination of physical evidence with emphasis on scientific investigation, recognition, collection, and preservation of evidence. Fingerprints, shoe prints, tool marks, firearms identification, paint chips and arson	Prerequisites: None.	L+L 3.0 3.0 3.0
AJS220	Organized Crime	Examines the history, structure and activities of organized crime groups. Reviews theories explaining the existence of organized crime and enforcement strategies used to combat it	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS221	Bloodstain Analysis	An examination of the use of bloodstain analysis in the reconstruction of crime scenes. Also covers historical issues, terminology, blood composition, motion, directionality and spatter along with scene documentation, courtroom presentations and health issues	Prerequisites: A grade of C or better in AJS216 or FOR106 or permission of Instructor.	LEC 3.0 3.0 3.0



AJS223	Forensic Pathology: Death Investigation	An examination of the medical investigation of sudden, unnatural, unexplained or violent deaths. Explains the legal and medical roles of death investigators and medical examiners. Additional topics include the autopsy, documenting and evaluating the body, routine and special investigative techniques, and death event reconstruction.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS225	Criminology	Study of deviance, society's role in defining behavior; theories of criminality and the economic, social, and psychological impact of crime; relationships between statistics and crime trends. Examines crime victimization and the various types of crime and categories of offenders. Required in the AJS curriculum	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS230	The Police Function	Theories of procedures and methods of operations of public police with emphasis on discretionary powers available to the working police officer. Career opportunities and current trends in law enforcement presented	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS240	The Correction Function	Examines the history and development of correctional theories and institutions	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS241	Police Photography	Emphasis on proper procedure for photographing crime scenes, accident scenes, and laboratory specimens. Discussion of photographic techniques, equipment, lighting techniques, aerial photography, video and motion pictures, macro and micro photography, filters, and preparation for court presentation using selected simulations	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS242	Crime Scene Processing	Procedures and technology required to process crime scenes including how to protect a crime scene, collect information, search for, collect, and preserve physical and biological evidence, and conduct field tests. Practical experience in evidence collection and crime scene sketching and processing	Prerequisites: A grade of C or better in AJS213 and (AJS214 or AJS241) or permission of Instructor.	LEC 3.0 3.0 3.0
AJS243	Crime Scene Reconstruction	Examines techniques used to reconstruct the physical actions that occurred at a crime or accident scene. Involves the use of physical, testimonial, and documentary evidence, knowledge of criminal modus operandi and the scientific method, including deductive and inductive logic. Includes analysis of case studies.	Prerequisites: A grade of C or better in AJS215 or AJS216 or AJS219 or AJS275 or FOR105 or permission of Instructor.	LEC 3.0 3.0 3.0
AJS244	Advanced Crime Scene Photography	Use of advanced photographic techniques for photographing crime scenes and forensic evidence. Includes flash photography, video, and special situation photography of latent prints, corpses, blood splatter and other forms of evidence	Prerequisites: A grade of C or better in AJS214 or AJS241 or permission of Instructor.	LEC 3.0 3.0 3.0
AJS245	Forensic Pathology: Advanced Death Investigation	An advanced examination of the role of the medical examiner in crime scene investigations, mass disasters, motor vehicle accidents, and other unnatural deaths. Covers basic forensic biomechanics, advanced forensic anthropology and the role of the medical examiner as an expert court witness.	Prerequisites: A grade of C or better in FOR223.	LEC 3.0 3.0 3.0
AJS249	Community Policing	Examines the history, philosophy, implementation, administration, application, benefits and future of community policing	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS250	Correctional Administration	History of punishment and evolution of correctional facilities. Military, formal-participative, and leadership models of management, as well as management by objectives. Modern management techniques, middle and line management in institutions, probation and parole	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS255	Crime, Law, and Mental Health	An interdisciplinary course that draws from the fields of psychology, sociology, criminology, and law. Covers the distinct and interfacing roles of mental health professionals and the legal justice system when dealing with a mentally ill criminal offender. Other topics covered include mental health issues within communities, role of clinical assessment, civil and criminal commitment, civil competencies, confidentiality of clinicians, rights and refusal to treatment, and informed consent.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS256	Law Enforcement Firearm Instructor	A train the trainer course for police firearm instructors. Covers instructional techniques for the pistol, revolver, and shotgun.	Prerequisites: AzPost (Peace Officer Standard and Training) Certified Police General Instructor or permission of Department or Division.	LEC 5.0 5.0 5.0
AJS256AA	Law Enforcement Patrol Rifle Instructor	Techniques on proper manipulation and marksmanship skills needed by a patrol officer/deputy in the use of the patrol rifle, and techniques of teaching those skills to other officers/deputies.	Prerequisites: AzPOST (Peace Officer Standard and Training) certified law enforcement firearms instructor or permission of Instructor.	LEC 3.0 3.0 3.0
AJS258	Victimology and Crisis Management	Victimology, the criminal justice system, techniques of crisis intervention, and the importance of a multicultural and global perspective. Includes sexual assault, family violence, post-traumatic stress disorder, the role of substance abuse, effective coping skills, appropriate community resources and the responsiveness of the justice system.	Prerequisites: None.	LEC 3.0 3.0 3.0

AJS259	Psychology of Sexual Variation and Sexual Deviance	Considers various categories of sexually deviant behavior; their probable causes and society's attitude toward them.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
AJS260	Procedural Criminal Law	Concerned with the understanding of procedural criminal law. Examines the rationale underlying major court holdings, the procedural requirements that stem from these holdings, and their effect on the daily operations of the criminal justice system	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS263	Courtroom Testimony For Track Evidence	Provides an overview with proper and effective methods and techniques in courtroom testimony as it relates to footwear and tire track examinations and comparisons. Numerous practical exercises related to public speaking utilized and implemented to emphasize and critique skills of the students to properly perform this level of training.	Prerequisites: A grade of C or better in AJS163, AJS164, and AJS165.	LEC 2.5 2.5 2.5
AJS264	Law Enforcement Instructor Certification	Designed for criminal justice trainers. The adult learner, developing a course, characteristics of effective instruction, evaluation methods.	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS269AA	Internship	Supervised field training for preservice administration of justice students. Maximum of three (3) credit hours allowed in program	Student sponsored by governmental enforcement agency and permission of Department or Division.	LAB 1.0 5.0 0.0
AJS269AB	Internship	Supervised field training for preservice administration of justice students. Maximum of three (3) credit hours allowed in program	Student sponsored by governmental enforcement agency and permission of Department or Division.	LAB 2.0 10.0 0.0
AJS269AC	Internship	Supervised field training for preservice administration of justice students. Maximum of three (3) credit hours allowed in program	Student sponsored by governmental enforcement agency and permission of Department or Division.	LAB 3.0 15.0 0.0

AJS270	Community Relations	Examination, recognition and understanding of community problems; community action programs; methods of coping with human behavior, victimology, conflict and communication; ethnic and minority cultures and environments; the community and relationships with the criminal justice system	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS275	Criminal Investigation I	Introduction to the theory of criminal investigation. Examines crime scene procedures, case preparation, interviewing, and basic investigative techniques	Prerequisites: None.	LEC 3.0 3.0 3.0
AJS280	Peace Officer Certification	Training program for peace officers, leading to certification by the Arizona Peace Officer Standards and Training Board (AzPOST), the statutory agency for certifying peace officers in Arizona. Covers current industry-specific training including expectations of recruits in the areas of academics, physical fitness, mental, and emotional preparation. Emphasis on professional and ethical behavior.	Prerequisites: Employment by the partnership organization is required for enrollment in this course.	L+L 40.0 56.0 56.0
AJS280AA	Peace Officer Certification I	Phase I of the training program for peace officers, leading to certification by the Arizona Peace Officer Standards and Training Board (AzPOST), the statutory agency for certifying peace officers in Arizona. Covers current industry-specific training including expectations of recruits in the areas of academics, physical fitness, mental, and emotional preparation. Emphasis on professional and ethical behavior.	Prerequisites: Students must comply with AzPOST standards for peace officers.	L+L 20.0 28.0 28.0

AJS280AB	Peace Officer Certification II	Phase II of the training program for peace officers, leading to certification by the Arizona Peace Officer Standards and Training Board (AzPOST), the statutory agency for certifying peace officers in Arizona. Covers current industry-specific training including expectations of recruits in the areas of academics, physical fitness, mental, and emotional preparation. Emphasis on professional and ethical behavior.	Prerequisites: A grade of C or better in AJS/LET280AA or permission of Program Director.	L+L 20.0 28.0 28.0
AJS282AA	Service-Learning Experience in Administration of Justice Studies	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
AJS282AB	Service-Learning Experience in Administration of Justice Studies	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
AJS282AC	Service-Learning Experience Administration of Justice Studies	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
AJS289AJ	Street Gangs I	Introduction to street gang identification, history, culture, and current trends, specifically in the western United States.	Prerequisites: Certified Officer or permission of Instructor.	LEC 1.0 1.0 1.0
AJS290AH	Use of Force	Examines issues related to the use of force by and against police officers. Explores police use of force decision-making options. Reviews recent changes in Arizona law relative to police officers	Prerequisites: Permission of Department or Division.	L+L 0.5 0.5 0.5
AJS290AI	Theories of Criminal Behavior	Theories of human behavior and crime. Biological, sociological, and psychological approaches to the theories of criminal behavior	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290AU	Child Abuse Investigation	Definition and investigation of the causes and effects of child abuse	Prerequisites: None.	LEC 1.0 1.0 1.0

AJS290AW	Narcotics and Dangerous Drugs	Pharmacological effects of the use and abuse of drugs, including a description of common abuse patterns and investigative techniques used in the enforcement of drug laws	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290AZ	Police Interrogation Techniques	Proper interview and interrogation techniques, including a discussion of the constitutional rights of the defendant and applicable court decisions	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BB	Police Report Writing	Writing clear, concise, and accurate reports with an emphasis on sentence and paragraph construction, grammar, and punctuation	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BE	Probation and Parole	Current issues in probation and parole, including sentencing, parole revocation, and administrative procedure	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BH	Sex Crimes Investigation	Investigative procedures employed by the police and courtroom procedures utilized by the prosecuting attorney in sex-related crimes	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BJ	Accident Investigation I	Skills and concepts necessary to conduct an adequate traffic accident investigation	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BN	Courtroom Testimony Seminar	Courtroom demeanor and protocol. Role and primary functions of witness and legal counsels	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BS	Stress in Law Enforcement	Major stress that affect a police officer; effects of stress and methods for reducing stress	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BU	Family Violence	Family violence issues as they relate to the criminal justice response	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS290BV	Victim Assistance	An overview of victim issues emphasizing strategies used to reduce the trauma associated with crime. Includes description of counseling methods, referral procedures, intervention techniques, and community resources	Prerequisites: None.	LEC 1.0 1.0 1.0

AJS290BW	Communication in Criminal Justice	Study of barriers to effective communication in the field of criminal justice. Development of effective intradepartmental and interdepartmental communication as well as communication with the community and within the courtroom	Prerequisites: None.	LEC 1.0 1.0 1.0
AJS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
AJS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0



AJS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
AJS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
AJS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

AJS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
AJS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ALT100	Academic Literacy Through Integrated Reading and Writing	Develops academic language skills and critical reading skills for organizing, analyzing, and retaining material through complementary reading and writing assignments. Prepares students for college level reading and writing intensive courses as well as career-related reading and writing tasks.	Prerequisites: An appropriate District placement.	LEC 4.0 4.0 4.0
AMS101	Introduction to Automated Manufacturing	An introduction to automated manufacturing and the role of the manufacturing technician. Includes general manufacturing techniques, industry standards, and statistical process control	Prerequisites: None.	LEC 2.5 2.5 2.5

AMS110	Programming Automated Equipment	Automated equipment uses, characteristics, geometric movement, and performance measures. Programming, troubleshooting, operating, and maintaining an automated (robotic) equipment system	Prerequisites: A grade of C or better in ELE111 OR ELC/FAC/HVA105.	L+L 3.0 6.0 6.0
AMS125	Fluid Power and Vacuum Systems	Fundamental fluid power and vacuum for industry. Pneumatic, hydraulic, and vacuum system technologies with emphasis on assembly, integration, and measurement.	Prerequisites: A grade of C or better in ELE111 OR ELC/FAC/HVA105.	L+L 4.0 6.0 6.0
AMS150	Digital Systems and Microprocessors	Fundamentals of digital systems and microprocessors with Boolean Algebra and combinational logic. Microprocessor programming and applications.	Prerequisites: A grade of C or better in ELE111 or ELC/FAC/HVA105.	L+L 4.0 6.0 6.0
AMS160	Linear Circuits	Linear circuit fundamentals. Includes diodes, bipolar transistors, field effect transistors, and an operational amplifier.	Prerequisites: A grade of C or better in ELE111 OR ELC/FAC/HVA105.	L+L 3.5 6.5 6.5
AMS210	Electro-Mechanical Devices	Electro-mechanical devices including physics of simple machines. Gear and sensor assembly and troubleshooting. Designing, constructing, and troubleshooting power transmission and stepper motor drives.	Prerequisites: A grade of C or better in ELE111 OR ELC/FAC/HVA105.	L+L 3.0 7.0 7.0
AMS220	Automated Manufacturing Processes	Automated manufacturing including inventory management, computer aided processes, work-cell operation, advanced programmable logic controller (PLC) programming, and statistical methods and calculations.	Prerequisites: A grade of C or better in AMS110 and AMS125.	L+L 3.0 6.75 6.75
AMS282AC	Automated Manufacturing Systems Internship	Automated Manufacturing Systems work experience in a business or industry.	Permission of Program Director or Instructor.	LAB 3.0 18.0 0.0

AMS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AMS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
AMS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

AMT124	Aircraft Forms and Regulations, Weight and Balance, Drawings, and Ground Operations	Federal Aviation maintenance publications, forms and records. Overview of technician`s privileges and limitations. Perform aircraft weight and balance, aircraft ground operations and fuel servicing techniques. Drawings, symbols and schematic diagrams.	Prerequisites: Admission to the Aircraft Maintenance Technology program.	L+L 5.0 9.0 9.0
AMT126	Fundamentals of Mathematics and Electricity	Mathematical computation of fundamental electrical circuit parameters. Basic definitions, laws, and concepts. Schematic, wiring, and parts placement diagrams. Test and troubleshoot electrical and electronic components and circuits.	Prerequisites: Admission to the Aircraft Maintenance Technology program.	L+L 9.0 12.0 12.0
AMT128	Fundamentals of Aviation Physics, Corrosion Control, Materials and Processes, Fluid Lines and Fittin	Basic concepts of motion, fluid dynamics, heat and sound, aerodynamics, aircraft structure and theory of flight. Fluid lines and fittings, component identification, function, inspection, and installation. Cleaning and corrosion control, materials and processes, non-destructive testing, and precision measurement techniques.	Prerequisites: Admission to the Aircraft Maintenance Technology program.	L+L 5.0 9.0 9.0
AMT220	Fundamentals of Aircraft Wood Structures, Covering and Finishing, and Bonded Structures	Theories and techniques of aircraft wood structures. Inspection, test and repair of aircraft fabric and wood structures. Aircraft structural design and methods of working with selected materials. Characteristics of composites, inspections and repairs	Admission to the program.	L+L 3.0 6.0 6.0
AMT222	Atmosphere Control, Fire Detection, Ice and Rain Protection Systems	Operation and maintenance of aircraft auxiliary systems. Inspection, servicing, troubleshooting and repair of environmental control, ice and rain control, fire protection and warning systems	Admission to the program.	L+L 4.0 6.0 6.0
AMT224	Aircraft Sheet Metal	Inspection, fabrication, and repair techniques of aircraft structural and nonstructural components. Sheet metal heat-treating techniques	Admission to the program.	L+L 5.0 11.0 11.0

AMT226	Aircraft Landing Gear, Hydraulic, Pneumatic, Fuel, Position and Warning Systems	Identification, inspection, repair, and troubleshooting techniques of aircraft landing gear, hydraulic, fuel, pneumatic, and position and warning system components	Admission to the program.	L+L 7.0 12.0 12.0
AMT228	Aircraft Electrical Systems, Instruments, Fuel Indicating, Communication and Navigation Systems	Proper operation, inspection, servicing and troubleshooting of DC(Direct Current) and AC(Alternating Current) sources, systems, and components. Mechanical and electrical sensing and information display systems. Fuel indicator system inspections, repairs, and troubleshooting. Transmitter and receiver fundamentals. Avionics installation, inspection and testing	Admission to the program.	L+L 7.0 12.0 12.0
AMT230	Airframe Assembly, Inspection and Welding	Aircraft assembly and rigging. Flight control balancing and rigging. Airframe inspection techniques, reporting procedures, and aircraft jacking. Welding techniques, theory, and materials identification	Admission to the program.	L+L 6.0 11.0 11.0
AMT263	Aircraft Turbine Engines	Historical development and application of turbine engines. Theory of thrust and the design and environmental factors which influence thrust. Turbine engine troubleshooting, inspection, service, repair and overhaul. Operational characteristics and engine test techniques on the aircraft and in test cells	Admission to the program.	L+L 5.0 9.0 9.0
AMT264	Aircraft Reciprocating Engines	Historical development and application of reciprocating engines, theory, design, and operations. Techniques used in troubleshooting, overhaul, inspection, and repair of opposed and radial engines	Admission to the program.	L+L 7.0 11.0 11.0
AMT266	Engine Fuel Systems, Fuel Metering and Induction System	Inspection, servicing, troubleshooting, overhaul, and repair of aircraft fuel systems and components, fuel metering devices, injection systems, turbochargers, and superchargers. Induction system principles of operation and design	Admission to the program.	L+L 6.0 9.0 9.0

AMT268	Engine Electrical, Ignition and Starter Systems	Inspect, service, troubleshoot, overhaul, and repair of engine electrical, ignition, starter systems, and components	Admission to the program.	L+L 6.0 12.0 12.0
AMT270	Engine Instruments, Fire Protection and Lubrication, Cooling and Exhaust Systems	Operation, maintenance, servicing, inspection, repair, and troubleshooting of engine instruments, fire detection and extinguishing, engine lubrication, cooling, and exhaust systems	Admission to the program.	L+L 5.0 8.0 8.0
AMT272	Propeller Systems and Engine Inspections	Historical development, operation, disassembly, inspection, repair, and maintenance of propellers. Reciprocating and turbine engine inspection and documentation	Admission to the program.	L+L 4.0 8.0 8.0
AMT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AMT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

AMT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
APT101	Automotive Service Operations	Theory and operation of basic automotive systems. Basic principles of working in an automotive service area. Management-employee relations, resume writing, interviewing, shop practices, flat-rate system, equipment care, and basic hand tools.	Prerequisites: None.	LEC 3.0 3.0 3.0
APT111	Internal Combustion Engines Theory	Study of construction and operating principles of internal combustion engines and related lubrication, cooling, fuel, and electrical systems.	Prerequisites: None.	LEC 3.0 3.0 3.0
APT121AA	Auto Transmission (General Motors)	The fundamentals and principles of automatic transmissions presently in use by General Motors Corporation automobiles. Diagnosis, service, and reconditioning procedures necessary to maintain these units	Prerequisites: None.	L+L 3.0 5.0 5.0
APT122AA	Auto Transmission (Ford)	The fundamentals and principles of automatic transmissions presently in use by Ford Motor Company automobiles. Diagnosis, service, and reconditioning procedures necessary to maintain these units	Prerequisites: None.	L+L 3.0 5.0 5.0



APT123AA	Auto Transmission (Chrysler)	The fundamentals and principles of automatic transmissions presently in use by Chrysler Motor Company automobiles. Diagnosis, service, and reconditioning procedures necessary to maintain these units	Prerequisites: None.	L+L 3.0 5.0 5.0
APT131	Automotive Manual Power Trains	Designed for beginning automotive students. Operation, diagnosis, service, and repair of the automotive power train. Includes manual transmissions and transaxles, clutches, front and rear drive axles, drive shafts, differentials and transfer case.	Prerequisites: None.	LEC 6.0 3.0 3.0 LAB 0.0 7.0 7.0
APT141	Alignment, Steering, and Suspension	Designed for beginning automotive students. Fundamental principles of steering and suspension systems. Includes two- wheel and four-wheel alignment procedures. Emphasis on diagnosis, testing, service, and replacement of steering and suspension components.	Prerequisites: None.	LEC 6.0 3.0 3.0 LAB 0.0 7.0 7.0
APT151	Automotive Brake Systems	Designed for beginning automotive students. Fundamentals of drum, disc, ABS and hybrid regenerative braking theory. Includes training in diagnosis, testing, service, and repair.	Prerequisites: None.	LEC 4.0 2.0 2.0 LAB 0.0 5.0 5.0
APT161	Auto Electrical/Electronic Systems I	Designed for beginning automotive students. The principles of electricity including Ohm`s Law, circuit principles and wiring diagrams. Skill development will include diagnosis, testing, service and repair of batteries, starting systems, charging systems, lighting systems, horns, wipers, defoggers, door locks, power mirrors, power windows, power seats and the use of Digital Multi Meters (DMM) will be addressed in this course.	Prerequisites: None.	LEC 4.0 2.0 2.0 LAB 0.0 5.0 5.0

APT171	Automotive Air Conditioning	Designed for beginning automotive students. Theory and principles of ventilation, heating, automotive refrigeration, vacuum-electric controls, and automatic temperature control systems. Includes training in diagnosis, testing, service and repair.	Prerequisites: None.	LEC 4.0 2.0 2.0 LAB 0.0 5.0 5.0
APT181	Engine Performance and Diagnosis I	Designed for beginning automotive students. Engine construction and operating principles, including lubrication, cooling, induction, exhaust, fuel, and ignition systems. Includes training in diagnosis, testing, service, and repair.	Prerequisites: None.	LEC 6.0 3.0 3.0 LAB 0.0 7.0 7.0
APT262	Auto Electrical/Electronic Systems II	Designed for experienced students. This course develops knowledge of body control modules including skill development, diagnosis, testing, service, and repair of the following systems - advanced lighting circuits, vehicle stability control, traction control, basic and advanced climate control systems, integrated safety systems, collision avoidance systems, start-stop technology, hybrid technology, mobile connectivity, use of Digital Multi Meters (DMM) and automotive oscilloscopes.	Prerequisites: A grade of C or better in APT161 or permission of Instructor.	LEC 4.0 2.0 2.0 LAB 0.0 5.0 5.0
APT282	Engine Performance and Diagnosis II	Designed for the experienced engine performance student. This course will include training in fuel systems, emission systems, ignition systems, turbocharging, computerized engine controls and engine driveability. Also, training in diagnosis, testing, service, repair, and documenting for customer understanding using the 3C's which are Concern, Cause and Correction will be addressed in this course.	Prerequisites: A grade of C or better in APT181 or permission of Instructor.	LEC 6.0 3.0 3.0 LAB 0.0 7.0 7.0
ARB101	Elementary Arabic I	Introduction to the basic alphabet, grammar, pronunciation and vocabulary of the Arabic language. Listening, speaking, reading and writing skills.	Prerequisites: None.	L+L 5.0 5.0 5.0

ARB102	Elementary Arabic II	A continuation of ARB101. Continued study of grammar and vocabulary, with emphasis on pronunciation and speaking skills.	Prerequisites: A grade of C or better in ARB101. Completion of prerequisites within the last three years is required.	L+L 5.0 5.0 5.0
ARB115	Beginning Arabic Conversation I	Conversational Arabic with emphasis on basic sentence structure, pronunciation and vocabulary. Designed to develop speaking and listening abilities with less emphasis on grammar	Prerequisites: None.	LEC 3.0 3.0 3.0
ARB201	Intermediate Arabic I	Review of essential grammar of the Arabic language and study of the Arabic culture. Continued practice and development of reading, writing, and speaking skills. Emphasis on both fluency and accuracy in the spoken language.	Prerequisites: A grade of C or better in ARB102 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 5.0 5.0
ARB202	Intermediate Arabic II	Advanced grammatical structures in Arabic. Further development of language skills with emphasis on speaking the language.	Prerequisites: A grade of C or better in ARB201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 5.0 5.0
ARB296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

ARB296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
ARB296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
ARB296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

ARB298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ARB298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ARB298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

ARC100	Introduction to Environmental Design	A survey of design through historical evaluation of built environments and works of well-known architects. Principles, concepts, and skills associated with designs of actual and imagined ideas and things. Emphasis on social, technical, environmental, and theoretical forces that impacts design	Prerequisites: None.	L+L 3.0 6.0 6.0
ARC101	Introduction to Western Architecture	Survey of Western Architecture from prehistory to current times. Includes social and philosophical factors shaping predominant styles and theory across the periods.	Prerequisites: None.	LEC 3.0 3.0 3.0
ARC120	Design Fundamentals I	An introduction to architectural drawing and graphic representation methods. Using architectural drawings and graphic representations as visualization, and problem-solving methods. Emphasis on visual communication, and the application and development of the visual design via process as well as product.	Prerequisites: None.	L+L 3.0 6.0 6.0
ARC121	Introduction to Architectural Drafting: Manual	Emphasis on basic techniques and principles of manual architectural drafting. Includes hand lettering, line work, dimensioning, multi-view projection, work in plan, section, and elevation views, design standards, wall details, office procedures, and portfolio development	Prerequisites: None.	L+L 3.0 6.0 6.0
ARC140	Rendering and Portfolio Development	Two-dimensional and three-dimensional drawings and rendering methods, including freehand and/or use of drawing tools for presentation of ideas. Techniques for use of pencil, ink, and colors. Professional formatting of portfolios	Prerequisites: None.	L+L 3.0 6.0 6.0

ARC141	Architectural CAD I: Introduction	Introduction to Computer Aided Drafting (CAD) for Architecture, Interior Design, and related professions using AutoCAD software. Includes basic operational systems, drawing set-ups, architectural formats, and two-dimensional drawing. Editing commands, annotation, and plotting for the industry also included.	Prerequisites: None.	L+L 3.0 6.0 6.0
ARC142	Architectural CAD II: Plans and Elevations	Computer Aided Drafting (CAD) instruction directed to the creation of fully annotated plan, elevation, and schematic section views including dimensions, notes, symbols, and schedules. Introduction to three-dimensional (3D) CAD using SketchUp.	Prerequisites: A grade of C or better in ARC141 or permission of Instructor.	L+L 3.0 6.0 6.0
ARC143	Architectural CAD: Extended Study	Reinforcement and extended study of basic two-dimensional computer aided drafting (CAD) skills for Architecture, Interior Design, and related professions using AutoCAD software. Includes sending/receiving drawing files on web; templates/set-ups; dimension/text formats; sheet management; external referencing, design center, basic/extended drawing and editing commands, and plotting.	Prerequisites: A grade of C or better in ARC141 or permission of Instructor.	L+L 3.0 6.0 6.0
ARC146	Architectural Print Reading	Analysis and interpretation of architectural working drawings including written specifications and drawings prepared by consulting engineers.	Prerequisites: None.	L+L 3.0 3.0 3.0
ARC148	Methods and Materials of Construction	Modern methods of construction and materials for residential, multiple, and commercial building, including the four types of structures used: wood, concrete, steel and masonry. Methods of assembly and how different materials can be used to create desired designs. Requirements of most recent building codes and the F.H.A. standards	Prerequisites: None.	LEC 3.0 3.0 3.0

ARC150	Architectural Desktop I	Residential construction drawing using Architectural Desktop (ADT). Includes preliminary workspace setups, configuration procedures, modules operations, and on screen menus applicable for producing components of a building model.	Prerequisites: A grade of C or better in CON130 or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC160	Site Planning	Emphasis on the basic art of site planning, using professional design techniques and principles of architecture to develop site plans. Selection of materials, awareness of problems, and emphasis on the production of site plan drawings using board and/or computer aided drafting (CAD) skills.	Prerequisites: A grade of C or better in DFT122 or permission of Program Director.	L+L 3.0 6.0 6.0
ARC161	Residential Architectural Drafting	Basics of residential drafting and documentation topics and techniques. Includes preliminary planning and preparation for residential documentation; use of the local building codes and standards; complete drawing and annotation of a floor plan, reflected ceiling plan, roof plan, a building sections, framing plan, and exterior elevations.	Prerequisites: A grade of C or better in CON130 or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC162	Advanced Residential Architectural Drafting	Advanced residential drafting and documentation topics and techniques. Includes site orientation, layout and legal description; window and door schedules; interior elevation of kitchen and bath rooms; advanced instruction on framing and structural detail methods; foundation systems, support and layout; and other needed residential details and layouts.	Prerequisites: A grade of C or better in ARC161 and CON230 or permission of Department or Division.	L+L 3.0 6.0 6.0



ARC163	Commercial Architectural Drafting	Fundamental commercial drafting and documentation topics and techniques. Includes preliminary planning and preparation for commercial documentation; use of the local building codes and standards; building methods and materials of commercial structures; complete drawing and annotation of a floor plan, reflected ceiling plan, roof plan, building sections, and exterior elevations.	Prerequisites: A grade of C or better in CON130 or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC164	Advanced Commercial Architectural Drafting	Further development of advanced commercial drafting and documentation topics and techniques. Covers commercial building materials and methods, specifications, land drawings, foundation plans, interior elevations, and more details specific to commercial buildings.	Prerequisites: A grade of C or better in (ARC163 and CON130) or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC165	Introduction to Architecture Professional Practice and Ethics	Professional, legal, and ethical issues in architecture practice and services. Includes marketing issues, communications, standards, insurance and bonds, agreements, contracts and contractors, standard American Institute of Architecture (AIA) forms and conditions, selection of contractors, and bidding procedures	Prerequisites: None.	LEC 3.0 3.0 3.0
ARC201	Architectural History: Prehistory to Rococo	In depth analysis of Western Architecture from Prehistory to 1730. Includes social, religious, political, philosophical, scientific, and environmental factors shaping predominant styles of the historical periods.	Prerequisites: None.	LEC 3.0 3.0 3.0
ARC202	Architectural History: Modern Architecture	In-depth analysis of Western Architecture from the Industrial Revolution to current times. Includes social factors, theory, and polemics shaping predominant styles of the modern periods.	Prerequisites: None.	LEC 3.0 3.0 3.0

ARC225	Fundamentals of Architectural Detailing	Introduction to construction /architecture detailing. Examines functional, construction-related, and aesthetic applications of detailing.	Prerequisites: A grade of C or better in CON130 or CON252 or permission of Department or Division.	LEC 3.0 3.0 3.0
ARC226	Advanced Architectural Detailing	Advanced methods of detailing major construction materials such as wood, steel, and concrete, ranging from simple residential to more complicated commercial structures. Includes detailing foundations, exterior and interior walls, roof and ceiling areas.	Prerequisites: A grade of C or better in CON130 or CON252 or permission of Department or Division.	LEC 3.0 3.0 3.0
ARC243	Architectural CAD III: Site Plans and Sections	Computer-aided drafting (CAD-based) instruction directed to the creation of fully annotated site plans and sectional views. Development of professional quality site plans, wall sections, and building sections working from given residential and commercial layouts. Assignments incorporate applicable codes, construction materials and methods and office practices typical to the local area.	Prerequisites: A grade of C or better in ARC142 or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC244	Architectural CAD IV: Structural Systems	CAD-based(Computer-Aided Drafting) instruction for layout and completion of fully annotated structural drawings. Focuses on working from residential and commercial layouts to develop professional quality roof, roof framing, floor framing and foundation plans. Emphasis on the use of applicable codes, construction materials and methods, and office practices typical to the local area	Prerequisites: A grade of C or better in ARC142 or permission of Department or Division.	L+L 3.0 6.0 6.0

ARC245	Architectural CAD V: Mechanical and Electrical Systems	CAD-based(Computer-Aided Drafting) instruction for layout and completion of fully annotated building systems drawings. Focuses on working from residential and commercial layouts to develop professional quality Electrical, Mechanical(HVAC), Plumbing and Reflected Ceiling plans. Emphasis on the use of applicable codes, construction materials and methods, and office practices typical to the local area	Prerequisites: A grade of C or better in ARC142 or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC246	Architectural CAD VI: Construction Details	Typical southwestern construction systems and details. Creation of personal standard detail files for wood frame, concrete masonry, and other specialized construction systems.	Prerequisites: A grade of C or better in ARC243 or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC250	Basic Revit	Basic skills required to complete architectural drawings with Revit software; simplified overview of the software program and operations gained through completing typical plan, elevation, sectional, and 3D views, using generic walls and related components.	Prerequisites: None. ARC141, or previous AutoCAD/industry experience recommended.	L+L 3.0 6.0 6.0
ARC251	Intermediate Revit	Comprehensive use of Revit Design Development tools through the development of 3-D model(s) in working drawing and rendered formats. Includes completing a set of construction documents from creating walls, incorporating doors, windows, floor, stairs, etc., to adding views and annotation to various sheets and coordinating those sheets within the finished set.	Prerequisites: None. ARC250 or previous architectural and CAD experience strongly recommended.	L+L 3.0 6.0 6.0
ARC252	Advanced Revit	Advanced applications and use of REVIT architectural software in completing assigned projects; focus on customization of the Revit environment and developing Revit families.	Prerequisites: A grade of C or better in ARC251 or permission of Instructor.	L+L 3.0 6.0 6.0

ARC255	Introduction to Revit Structure	Introduction to Revit Structure software, addressing specialized options and processes used in structural engineering offices; includes project modeling, model analysis, reinforcement modeling, detailing, and documentation.	None. Previous educational/professional experience in architecture or structural engineering strongly recommended.	L+L 3.0 6.0 6.0
ARC261	Architectural CAD 3D I: Introduction	Introduction to construction, manipulating, and rendering three-dimensional (3D) objects and architectural spaces on the computer using AutoCAD software.	Prerequisites: A grade of C or better in ARC141 or equivalent or permission of Department or Division. ARC142 suggested but not required.	L+L 3.0 6.0 6.0
ARC262	Architectural CAD 3D II: ADT and VIZ	Additional skill development in constructing, manipulating, and rendering three-dimensional (3D) architectural computer models using AutoCAD Architectural Desktop (ADT) and Viz Render (VIZ) software	Prerequisites: A grade of C or better in ARC261 or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0
ARC265	Sketchup I: Introduction to Sketchup	Provides students with introductory level instruction utilizing Sketchup rendering software for school and workplace applications. Addresses basic drawing/rendering commands, accessing external drawing files, and plotting through the creation of both three-dimensional schematic and rendered interior and exterior building views.	Prerequisites: None. Previous CAD experience recommended but not required.	L+L 3.0 6.0 6.0
ARC266	Sketchup II: Advanced Rendering Techniques	Provides students with advanced instruction utilizing Sketchup, Google Earth, Sandbox and Podium rendering software for school and workplace applications. Creation of photo-realistic rendered three-dimensional interior and exterior building/site views.	Prerequisites: A grade of C or better in ARC265 or permission of Instructor.	L+L 3.0 6.0 6.0

ARC270	Architectural Technology Synthesis	Provides students an opportunity to integrate and synthesize knowledge and skills acquired in prerequisite courses. Includes completion of a full set of working drawings using AutoCAD under supervision comparable to workplace situations. Designed to provide practice in self-checking work, correcting and editing drawings, and assembling a portfolio.	Prerequisites: A grade of C or better in (ARC243 and ARC244 and ARC245) or permission of Instructor.	L+L 3.0 6.0 6.0
ARC282AA	Volunteerism for Architecture: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Department or Division.	LAB 1.0 1.0 0.0
ARC282AB	Volunteerism for Architecture: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Department or Division.	LAB 2.0 2.0 0.0
ARC282AC	Volunteerism for Architecture: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Department or Division.	LAB 3.0 3.0 0.0
ARC290AA	Architecture Internship	Architecture internship office and field experience with private agencies, public agencies, or citizen volunteer groups.	Prerequisites: A grade of C or better in ARC282++ or permission of Department or Division.	LAB 1.0 1.0 0.0
ARC290AB	Architecture Internship	Architecture internship office and field experience with private agencies, public agencies, or citizen volunteer groups.	Prerequisites: A grade of C or better in ARC282++ or permission of Department or Division.	LAB 2.0 2.0 0.0
ARC290AC	Architecture Internship	Architecture internship office and field experience with private agencies, public agencies, or citizen volunteer groups.	Prerequisites: A grade of C or better in ARC282++ or permission of Department or Division.	LAB 3.0 3.0 0.0

ARC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ARC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
ARC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

ARC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
ARC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ARC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ARC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ARH100	Introduction to Art	Understanding and enjoyment of art and visual culture through study of two-dimensional and three-dimensional works of art, design elements, media and processes, and cultural contexts. Emphasis on contemporary topics and cultural diversity in the arts.	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH101	Prehistoric through Gothic Art	History of art from prehistoric through medieval period	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH102	Renaissance Through Contemporary Art	History of art from around the world from the Renaissance through contemporary period	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH109	History of American Art	Development and variety of American Art. Presentation of architecture, sculpture, painting and decorative objects	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH110	History of Graphic Design	Survey of the history of graphic design from its origins to the present. Traces the characteristics, aesthetics and the reciprocal influence of design and society. Includes movements and individual designers. Emphasizes the function of design as a distinct but equal branch of human visual communication and the role of design as the dominant visual exercise of the contemporary world	Prerequisites: None.	LEC 3.0 3.0 3.0



ARH112	History of Modern Art	Development of and significant aspects of modern art since the mid-nineteenth century. Emphasis on modern art's relationship to socio-political and aesthetic developments, new media and the rise of mass culture.	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH115	History of Photography	Survey of history of photography from beginning to present. Emphasizes medium's impact upon society and other visual arts. Technical developments, aesthetic concerns, and individual photographers studied	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH118	Introduction to Chinese Art	Explores Chinese philosophy, symbolism, history and religions that underlie the choice of subject matter and life forms in Chinese art. Uses Chinese bamboo brush, ink and rice paper to study Chinese calligraphy and traditional subjects for painting	Prerequisites: None.	L+L 3.0 3.0 3.0
ARH145	History of American Indian Art	Survey of American Indian Art from precontact to present. Reviews the impact of these art forms on contemporary American society, other world societies and on the visual arts. Explores characteristics, cultural influences and concerns represented in various art forms past and present. Features field trips to galleries and collections	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH201	Art of Asia	Introduction to the origins and historic development of art in Asia, with emphasis on China, Japan, and India	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH203	Art of Ancient Egypt	The art and culture of ancient Egypt from prehistoric through the Greco-Roman period	Prerequisites: None.	LEC 3.0 3.0 3.0

ARH204	Roman Art and Architecture	Detailed examination of the art and architecture of ancient Rome from the monarchical period to the late empire, with emphasis on the visual culture and artifacts of the civilization.	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH216	Pre-Columbian Art History	Art of the Americas prior to European contact, focusing on Mesoamerica and the Central Andean region and their respective adjoining areas, with some attention to the U.S. Southwest and Eastern Woodlands Mound Building cultures	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH217	Mexican Art History	Art of Mexico and related cultures, from the prehistoric to the contemporary period	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH240	Art and Architecture of the Islamic World to 1800	Introduction to the principal achievements in art and architecture of the Islamic world circa 650-1800 CE and placing them in social and cultural contexts and consideration of the historical evolution of Western knowledge and understanding of these works	Prerequisites: None.	LEC 3.0 3.0 3.0
ARH250	Visual Language and Interpretation	Examines the communication of concepts through visual interpretation and expression.	Prerequisites: A grade of C or better in (ART111, ART112, ART131, ART167 and ARH100) or permission of instructor.	LEC 1.0 1.0 1.0
ARH298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

ARH298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ARH298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ART100	Introduction to Digital Arts	Foundation course in digital arts and design, with emphasis in the production of art using the computer.	Prerequisites: None.	L+L 1.0 2.0 2.0
ART103	Typography in the Digital Age	Survey of the history of typography and individual designers. Emphasis on the function of typography as an integral part of effective visual communication. Study of type anatomy, mechanics, characteristics, structure, and the principles of effective selection and the relation of copy and image in graphic design. Evaluate fonts both visually and technically and learn how to manage them.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0

ART104	Cross-Media Marketing for Designers	Role of graphic designer in business with an emphasis on using graphic design to achieve marketing and sales objectives. Variety of communication channels explored, such as print and digital and including social media, web, and mobile media.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART105	Art Beyond the Classroom	Visual arts experience. Includes field trips to galleries, museums, and collections as well as art lectures, demonstrations, and varied studio experiences.	Prerequisites: None.	L+L 1.0 2.0 2.0
ART106	Gallery Operations	Operation of an art gallery. Includes organization, publicity, evaluation of artwork, selection and installation of exhibits.	Prerequisites: Permission of Instructor.	L+L 3.0 6.0 6.0
ART110	Experimental Chinese Painting	Explores ancient Chinese techniques with rice paper and Chinese ink to create traditional and nontraditional designs. Emphasis on use of Chinese techniques in mixed media works.	Prerequisites: None.	L+L 1.0 2.0 2.0
ART111	Drawing I	Fundamental principles of drawing. Emphasis on composition and facility in objective and expressive representation, using variety of drawing media	Prerequisites: None.	L+L 3.0 6.0 6.0
ART112	Two-Dimensional Design	Study of fundamental elements and principles of two-dimensional design.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART113	Color	Investigation seeking visual solutions to a variety of problems concerning color in two and three dimensions and modes of color appearances, including light and effects in design and theory of design.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART114	Digital Color	Overview of how color is perceived and utilized in a digital environment and how to ensure consistent color from capture to final output in print or online. Investigate visual solutions utilizing electronic devices for color correction, manipulation and integrity.	Prerequisites: None.	L+L 3.0 6.0 6.0

ART115	Three-Dimensional Design	Fundamental principles of three-dimensional design.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART116	Life Drawing I	Use of form, structure and anatomy of draped and undraped human figure to develop basic principles of sound draftsmanship	Prerequisites: None.	L+L 3.0 6.0 6.0
ART117	Life Drawing II	Further study of form, structure, and anatomy of the draped and undraped human figure with emphasis on composition	Prerequisites: A grade of C or better in ART116.	L+L 3.0 6.0 6.0
ART118	Art Anatomy	Artistic study of the concept of anatomical unity. Principle skeletal and muscular structures affecting surface form of the human figure. Includes drawing project, portfolio, and tests.	Prerequisites: A grade of C or better in ART116 or permission of Instructor.	L+L 3.0 6.0 6.0
ART119	Penciling for Sequential Art	Development of observational skills as they apply to sequential art. Emphasis on techniques that showcase how characters interact with their environment and manipulate props and cartooning anatomy. Includes techniques on composing page layouts, adapting scripts and reference gathering.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART120	Inking for Sequential Art	Development of inking materials and techniques used in sequential art. Emphasis on the types of tools used in the industry and the various means of employing them. Understanding the duties of the inker and the process of computer finishing.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART122	Drawing and Composition II	Emphasis on composition and exploration of drawing media	Prerequisites: A grade of C or better in ART111.	L+L 3.0 6.0 6.0

ART131	Photography I	Basic photographic principles and techniques. Basic camera functions and controls. Experience in the image-making process by creating and editing photographs for various display environments. Introduction to the photographic aesthetic and photography's role in society.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART132	Photography II	Advanced camera and darkroom techniques. Aesthetic awareness with personal expression	Prerequisites: A grade of C or better in ART131 or permission of Instructor.	L+L 3.0 6.0 6.0
ART133	Photography III	Refinement of aesthetic and technical aspects producing convincing images of highest quality	Prerequisites: A grade of C or better in ART132 or permission of Instructor.	L+L 3.0 6.0 6.0
ART134	Photography IV	Emphasis on personal statement and style. Related graphic art forms explored. Development of portfolio	Prerequisites: A grade of C or better in ART133 or permission of Instructor.	L+L 3.0 6.0 6.0
ART135	Photojournalism I	Basic technical knowledge of photographic process as applied by mass media	Prerequisites: A grade of C or better in ART131 or permission of Instructor.	L+L 3.0 6.0 6.0
ART137	Alternative Photographic Processes	Emphasis on development of alternative photographic processes including technique, aesthetics, and creative imagery. Exploration of various types of non-silver photographic processes including cyanotype, Van Dyke, Polaroid imaging, and others	Prerequisites: None.	L+L 3.0 6.0 6.0
ART138	Commercial Photography I	Basic techniques of lighting, camera work, and reproduction of commercial photography. Cooperation with commercial art community.	Prerequisites: A grade of C or better in (ART131 or ART142) or permission of Instructor.	L+L 3.0 6.0 6.0
ART139	Commercial Photography II	Advanced techniques with portfolio organization and presentation	Prerequisites: A grade of C or better in ART138.	L+L 3.0 6.0 6.0
ART140	Portrait Photography	Fundamentals of portrait photography. Basic techniques of lighting, posing, design, and digital workflows applicable to the industry. Theory and practices of a portrait photography business.	Prerequisites: A grade of C or better in ART131, or ART142, or permission of Instructor.	L+L 3.0 6.0 6.0

ART142	Introduction to Digital Photography	Fundamentals of digital photography. Includes camera operations, exposure techniques, introduction to digital output, and theory of digital photography.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART143	Intermediate Digital Photography	Intermediate theory and techniques of digital photography. Aesthetic awareness and personal expression from image capture through intermediate techniques in the digital darkroom. Introduction to high-resolution digital output.	Prerequisites: A grade of C or better in ART142 or permission of Instructor.	L+L 3.0 6.0 6.0
ART145	Digital Storybook	Enables students to find and develop a narrative representing an aspect of their personal histories. Use of digital technology to produce and archive a storybook.	Prerequisites: None.	L+L 1.0 2.0 2.0
ART150	Digital Storytelling	Enables students to find and develop their personal stories. Emphasis on the use of digital technology to create, edit, produce and archive a digital story	Prerequisites: None.	L+L 3.0 6.0 6.0
ART151	Sculpture I	Exploration of sculptural form and expression in clay, plaster, stone, wood and metal.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART152	Sculpture II	Emphasis on control of sculptural media	Prerequisites: A grade of C or better in ART151.	L+L 3.0 6.0 6.0
ART153	Woodworking I	Fundamental woodworking techniques to produce creative functional and sculptural, three-dimensional objects.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART154	Woodworking II	Advanced design, joinery, fixture building, and woodworking techniques. Application of design principles.	Prerequisites: A grade of C or better in ART153.	L+L 3.0 6.0 6.0
ART155	Glass Fusing and Slumping I	Introduction to the basics involved in glass fusing and slumping. The concepts of glass, glass fusing, and glass slumping will be covered with hands-on experience using a variety of techniques to create finished glass projects such as jewelry, dishes, frames, and door bells.	Prerequisites: None.	L+L 3.0 6.0 6.0

ART156	Glass Fusing and Slumping II	Further study in the area of glass fusing and slumping. Advanced techniques including Pate-de-Verre, Pattern Bars, watchbands, bracelets, and patterned dishes.	Prerequisites: A grade of C or better in ART155.	L+L 3.0 6.0 6.0
ART158	Introduction to Glass Blowing	Introduction to the basics involved in free hand blowing glass. The concepts of hot glass, glass shaping, and glass blowing will be covered with hands-on experience using a variety of techniques to create finished glass projects such as spheres, cones, cups, and other hollow glass objects.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART159	Intermediate Glass Blowing	Further study in the area of glass blowing. Advanced techniques including traditional techniques as well as further investigation into color, form, and scale.	Prerequisites: A grade of C or better in ART158.	L+L 3.0 6.0 6.0
ART160	Advanced Glass Blowing	Further study in the area of glass blowing with emphasis on advanced techniques and design considerations, such as sculpting, larger scale projects, working in multiples, and further refinement of technical skill.	Prerequisites: A grade of C or better in ART159.	L+L 3.0 6.0 6.0
ART161	Ceramics I	Introduction to ceramic materials and techniques of hand construction, decorating, glazing and throwing on potters' wheel	Prerequisites: None.	L+L 3.0 6.0 6.0
ART162	Ceramics II	Major emphasis on wheel throwing, glaze making and decorating techniques	Prerequisites: A grade of C or better in ART161.	L+L 3.0 6.0 6.0
ART164	Introduction to Drawing and Digital Paint	Essential skills, concepts and use of digital media for drawing and painting. From concept to line-drawing; use of value, texture, color, lighting, space and scale elements to execute a finished rendering	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART164AC	Introduction to Drawing and Digital Paint III	Essential skills, concepts and use of digital media for drawing and painting to execute a finished rendering and output formats.	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0



ART165	Watercolor Painting I	Transparent and Gouache watercolor painting.	Prerequisites: A grade of C or better in (ART111 and ART112) or permission of Instructor.	L+L 3.0 6.0 6.0
ART166	Watercolor Painting II	Painting in water soluble media. Emphasis on individual techniques and design.	Prerequisites: A grade of C or better in ART165.	L+L 3.0 6.0 6.0
ART167	Painting I	Exploration of technical and expressive possibilities of various painting media in easel painting.	Prerequisites: A grade of C or better in (ART111 and ART112) or permission of Instructor.	L+L 3.0 6.0 6.0
ART168	Painting II	Continued refinement of painting skills and investigation of new possibilities in painting	Prerequisites: A grade of C or better in ART167 or permission of Instructor.	L+L 3.0 6.0 6.0
ART169	2D Media Design	Generation of two-dimensional (2D) images, designs, and media using digital and traditional methods of visual problem solving. Understanding digital and design-based techniques and workflows.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART170	3D Computer Design	Artistic manipulation of computer images. Emphasis on color and three-dimensional (3D) design in production of these images. Existing software used to generate three-dimensional art.	Prerequisites: A grade of C or better in ART100 or ADA/ART169 or permission of Instructor.	L+L 3.0 6.0 6.0
ART171	Jewelry I	Fundamentals of jewelry making. Covers hand formed methods, including cutting, shaping, forging, soldering, and lost wax technique	Prerequisites: None.	L+L 3.0 6.0 6.0
ART172	Jewelry II	Further refinement of personal expression using techniques and design concepts of ART171	Prerequisites: A grade of C or better in ART171.	L+L 3.0 6.0 6.0
ART173	Computer Art	Introduction to the multiple elements of paint software programs using the microcomputer. Basic foundation in the use of computer techniques including color paint programs for the production of computer images. Use of electronic input and output devices.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0

ART174	Electronic Color Principles	Interactive use of color for graphic communication. Color theory, color relationships and electronic color manipulation for computer graphic art, animation and multimedia.	Prerequisites: A grade of C or better in ART100 or Corequisites: ART100.	L+L 1.0 2.0 2.0
ART175	Electronic Publishing Design I	Introduction to the multiple elements of commercial publishing using the microcomputer. Basic foundation in the use of electronic page layout techniques. Emphasis on publication design layout and concepts.	Prerequisites: A grade of C or better in ART100 or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART177	Digital Photographic Imaging I	Introduction to multiple elements of digital imaging. Basic foundation in photographic manipulation of images, with special attention to aesthetic foundations underlying photographic composition.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART178	Digital Arts Studies	Designed for broad overview of the digital arts. Experience in digital based media, creative problem solving, design and aesthetics.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART179	Electronic Presentation Design	Introduction to the multiple elements of commercial-graphic presentation materials using the microcomputer and other advanced technologies. Basic foundation in the use of computer presentation software programs using presentation techniques. Special attention to aesthetic foundations underlying all presentation materials.	Prerequisites: A grade of C or better in ART100 or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART180AC	Designer's Tools: Quark Express	Introduction to the multiple elements of Quark Express, a visual art adaptation software package using the Macintosh microcomputer. Basic foundation course in the use of electronic techniques, including appropriate input and output production devices	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 1.0 2.0 2.0

ART180AD	Designer's Tools: Adobe Illustrator	Introduction to the multiple elements of Adobe Illustrator, a visual art adaptation software package using the Macintosh microcomputer. Basic foundation course in the use of electronic techniques, including appropriate input and output production devices.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AE	Designer's Tools: Adobe Photoshop	Introduction to the multiple elements of Photoshop software package using the microcomputer. Basic foundation in the use of electronic techniques including appropriate input and output production devices.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AI	Designer's Tools:3-D Studio Textures	Introduction to multiple elements of 3-D studio material using DOS microcomputers. Basic foundation in the use of electronic input and output production devices.	Prerequisites: A grade of C or better in ADA/ART/MMT184 or ART284 or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AJ	Designer's Tools:3-D Special Effects	Introduction to multiple elements of 3-D studio special effects software using DOS microcomputer. Basic foundation in the use of electronic input and output production devices.	Prerequisites: A grade of C or better in ADA/ART/MMT184 or ART284 or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AK	Designer's Tools: Adobe Premiere	Basic functions and use of Adobe Premiere video editing software. Applications for computer animation, multimedia, and digital video production.	Prerequisites: A grade of C or better in ART100. ADA/ART/MMT184 is strongly recommended but not required.	L+L 1.0 2.0 2.0
ART180AL	Designer Tools: Character Studio	Character Studio 3D-Character Animation software. Character motion, editing and blending electronic with traditional techniques.	Prerequisites: A grade of C or better in ART100 and ADA/ART/MMT184. ART116 is recommended but not required.	L+L 2.0 5.0 5.0
ART180AM	Designer's Tools: Dreamweaver	Introduction to Dreamweaver software and Web editing process. Developing sites, automating production, Web design integration using graphics, and graphics output. Learn powerful Web editing methods.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 1.0 2.0 2.0

ART180AN	Designer's Tools: Flash	Introduction to Flash software. Basic foundation in Flash vector graphics, 2D and 3D animation and creation of full motion video with sound.	Prerequisites: A grade of C or better in (ART180AD and ART180AE) or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AP	Designer's Tools: Photoshop for Multimedia	Advanced Adobe Photoshop techniques for multimedia. Foundations in imaging for animation, Web, graphics, digital video and offset graphics.	Prerequisites: A grade of C or better in ART180AE or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AR	Designer's Tools: Final Cut Pro	Introduction to non-linear editing using Final Cut Pro software for graphics, animation and the Web applications	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AS	Designer's Tools: Adobe InDesign	Basic functions and operations of Adobe InDesign software. Application for graphic design, publishing, digital pre- press production and web layout	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 1.0 2.0 2.0
ART180AT	Designer's Tools: Adobe After Effects	Introduction to Adobe After Effects software. Digital effects and motion graphics for the WEB, CD-ROM, DVD, video, film and animation	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 1.0 2.0 2.0
ART181	Graphic Design I	Basic understanding of design principles and the stages of graphic design, with an emphasis on final product and presentation.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART182	Graphic Design II	Utilizing graphic design essentials of typography, contrast and layout to develop design solutions to problems in consumer advertising, typography and structure.	Prerequisites: A grade of C or better in ART181 or permission of Instructor.	L+L 3.0 6.0 6.0
ART183	Digital Graphic Arts I	Graphic design use in microcomputer; black and white graphics, standard and color brushes, lines, shapes, area fills and fonts. Application to illustration, advertising graphics, typography, and video interaction.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0

ART184	Digital Animation I	The art of animation (animated sequences, special effects, titles, etc.) using the computer. Construction characters, background graphics, color, scaling, storyboard, cells, timing, editing, and surface rendering. Screening and discussion of selected animated short films and videos.	Prerequisites: A grade of C or better in (ART111 or ART116) or permission of Instructor. Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART185	3D Modeling for Animation I	Basic concepts of 3D modeling. Anatomy of computer geometry; basic elements that make computer models-curves, surfaces, nurbs, and polygons. 3D translation, shading, materials, and rendering.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART187	Perspective Drawing for Animation	Perspective techniques for creating depth illusion as applied to principles of 3D modeling and animation. Study of size relationships, size and space variation, converging lines, vanishing points, overlapping planes. 3D lighting systems and light changes over distance	Prerequisites: None.	L+L 3.0 6.0 6.0
ART190	Art of Web Site Design	Introduction to design production for websites. Layout, typography and presentation style for HTML (Hyper Text Markup Language). Design of mock-ups using digital design software to produce artistic form and content for the Web using Hyper Text Markup Language (HTML), digital text, and graphics. Discussion of color, proportion, typography and Web-specific design principles. Emphasizes design of cross-browser compatible interfaces that optimize usability, accessibility and browser interoperability.	Prerequisites: A grade of C or better in ART100, or permission of Instructor. CIS133DA recommended.	L+L 3.0 6.0 6.0

ART190AA	Art of Website Design I	Introduction to design production for websites. Layout, typography and presentation style for HTML (Hyper Text Markup Language). Design of mock-ups using digital design software to produce artistic form and content for the Web using Hyper Text Markup Language, digital text, and graphics.	Prerequisites: A grade of C or better in ART100, or permission of Instructor. CIS133DA recommended.	L+L 1.0 2.0 2.0
ART190AB	Art of Website Design II	Producing Web site pages, using design and Hyper Text digital text and graphics. Discussion of color, proportion, typography and Web-specific design principles.	Prerequisites: A grade of C or better in ART100 and ART/MMT190AA, or permission of Instructor. CIS133DA recommended.	L+L 1.0 2.0 2.0
ART190AC	Art of Website Design III	Producing Web sites using artistic form and content. Emphasizes design of cross-browser compatible interfaces that optimize usability, accessibility and browser interoperability.	Prerequisites: A grade of C or better in ART100 and ART190AB, or permission of Instructor. CIS133DA recommended.	L+L 1.0 2.0 2.0
ART191	Storyboarding and Layout	Introduction to storyboarding including film storytelling and scene presentation.	Prerequisites: A grade of C or better in ART111 or ART187.	L+L 2.0 4.0 4.0
ART192	Advanced Web Presentation Design	Advanced interactive application and training for Web designers and graphic artists using Quark, Illustrator, Photoshop, HTML Flash, Dreamweaver and Digital Video site optimization techniques. Development of design concepts for web pages that communicate and deliver Web content creatively.	Prerequisites: A grade of C or better in ART/MMT190 or permission of instructor. ART180AM and ART180AN suggested but not required.	L+L 3.0 6.0 6.0

ART200	Animation and Interactivity	Animation and object-oriented programming concepts and techniques using industry standard authoring tools applied by the creative industry to animation productions, and interactive media. Introduction to animation and object-oriented programming concepts and techniques using industry standard authoring tools. Includes tools used by the creative industry for animation productions and interactive media.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART202	Media Productions I	Introduction to digital media production tools, equipment, and broadcast applications. Pre-production including script writing, storyboards, budgeting and copyright; studio and mobile production including the use of cameras, lighting, audio recording, and new media tools; post-production including media editing, transitions, titles, overlays and basic motion graphics.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART203	Aesthetics of Web Design	Develop portfolio-level web design projects. Emphasis on advanced elements and principles of design. Continued development of aesthetic awareness and personal expression. Evaluation of aesthetic principles throughout semester.	Prerequisites: A grade of C or better in ART/MMT190 or permission of Instructor.	L+L 3.0 6.0 6.0
ART210	Design Tools for Imagery, Production, and Publishing	Industry standard development of image manipulation, digital production, digital negatives, typography, and desktop publishing. New techniques using integrated software with multiple platform applications. Emphasis on alternative processes including: technique, aesthetics and creative imagery.	Prerequisites: A grade of C or better in ART100 and [ADA/ART169 or (ADA/ART180AD, ADA/ART180AE, and ART180AS)] and ART181, or permission of Instructor.	L+L 3.0 6.0 6.0
ART211	Drawing and Composition III	Advanced development of drawing skill with emphasis on compositional theory	Prerequisites: A grade of C or better in ART122 or permission of Instructor.	L+L 3.0 6.0 6.0

ART215	Advanced Electronic Publishing	Advanced use of electronic page layout techniques including in-depth styles; typography; technical documents and digital publishing interactivity.	Prerequisites: A grade of C or better in ADA/ART175.	L+L 3.0 6.0 6.0
ART216	Life Drawing III	Advanced creative study from model in various painting and drawing media	Prerequisites: A grade of C or better in ART117 or permission of Instructor.	L+L 3.0 6.0 6.0
ART217	Life Drawing IV	Further development of skills in expressive drawing materials and techniques as applied to finished drawings of the human form	Prerequisites: A grade of C or better in ART216 or permission of Instructor.	L+L 3.0 6.0 6.0
ART219	Coloring, Toning and Lettering for Sequential Art	Understanding of the digital rules and programs used in coloring, toning and lettering comics, and the problems presented therein within the sequential narrative. Emphasis on rules and guidelines within the industry, and digital coloring and lettering.	Prerequisites: A grade of C or better in (ART100, ART119, and ART120) or permission of Instructor.	L+L 3.0 3.0 3.0
ART220	Publishing for the Comic Industry	Understanding of the comics industry. Includes researching, marketing, packaging, and distributing comics. Emphasis on selling and submitting to comic publishers, how to develop comics for self-publishing, promotional materials, and understanding contracts and copyrights involved in the process of publishing comics.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART221	Comics Creation	Development of a complete sequential comic, using all comics skills from beginning to end. Process includes scripting, penciling, inking, coloring or toning, lettering, and printing for publication.	Prerequisites: A grade of C or better in (ART100 and ART219) or permission of Instructor.	L+L 3.0 3.0 3.0
ART222	Drawing and Composition IV	Further study of drawing techniques with emphasis on individual problems and techniques	Prerequisites: A grade of C or better in ART211 or permission of Instructor.	L+L 3.0 6.0 6.0



ART227	Estimating for Digital Output	Introduction to estimating for digital output including job costing, labor/time, material and equipment costs. Focus on layout and imposition for press. Learn outside purchasing and vendor relationship management.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART230	Visual Brand Design	Simulates an actual working environment which exposes students to the challenges and advantages of working in cross-functional teams. Topics include preparation for collaborative work environments, critical thinking and communication, messaging, and effectively employing marketing and design principles. Reviews logo creation and implementation, preparing online and offline collateral, creating marketing messaging and campaigns, written and oral communication, and personal presentation skills.	Prerequisites: A grade of C or better in (ART100 and MKT110) or permission of Instructor.	L+L 3.0 6.0 6.0
ART234	Color Photography I	Basic principles of color theory, camera and input and output techniques using slide film or digital photography.	Prerequisites: A grade of C or better in ART131 or ART142 or permission of Instructor.	L+L 3.0 6.0 6.0
ART235	Color Photography II	Basic theories and techniques of color negative materials	Prerequisites: A grade of C or better in ART234 or permission of Instructor.	L+L 3.0 6.0 6.0
ART236	Photography Location Shooting	Practical application of camera techniques, use of lighting, and on-location shooting for post-production printing.	Prerequisites: A grade of C or better in (ART131 OR ART142) OR permission of Instructor.	L+L 3.0 6.0 6.0
ART237	Fashion Photography	Practical application of photographic techniques within the fashion industry. Includes the photographing of models, garments, and accessories.	Prerequisites: A grade of C or better in (ART131 OR ART142) OR permission of instructor.	L+L 3.0 6.0 6.0

ART240	Cinematography and Directing for 2D/3D Animation	Essential skills, concepts and the use of virtual cameras in 2D and 3D animation environments: planning, pre-production, storyboards and pre-visualization using real-world camera principles is combined with rendering, sound and post-production in a nonlinear environment.	Prerequisites: A grade of C or better in (ADA/ART/MMT184, or ART/MMT185, or FMP108) or permission of Instructor.	L+L 3.0 6.0 6.0
ART241	Intaglio	Introduction to traditional concepts and techniques for Intaglio printmaking. Deals with black and white printing; includes brief introduction to color printing. Covers various tools and materials used in Intaglio	Prerequisites: A grade of C or better in ART111 and ART113.	L+L 3.0 6.0 6.0
ART242	Lithography	Provides introduction to concepts and techniques of Lithography, both in plate and stone methods. Focus on black and white Lithographic drawing techniques. Introduction in color printing given	Prerequisites: A grade of C or better in ART111 and ART113.	L+L 3.0 6.0 6.0
ART246	Digital Fabrication	Introduction to concepts and application of computer visualization, modeling, and rapid prototyping for interdisciplinary arts. Students will design sculptures applying 3D computer modeling techniques, rapid prototyping, and other available digital output devices to produce solid models.	Prerequisites: None.	L+L 3.0 6.0 6.0
ART248	Design Self Promotion	Defining career goals, and developing a self-promotional marketing plan to enter the workplace, including a resume, business card, leave behind, social media presence, interactive portfolio and printed portfolio. Understand business ethics and etiquette, artist's rights, copyright laws and contractual agreements, and develop networking, interview and communication skills.	Prerequisites: None.	L+L 3.0 6.0 6.0

ART249	Visual Communication Project Management and Workflow	Communication and coordination of digital projects from inception through completion. Emphasis on job workflow including professional communication, time management, detailed follow through and conflict resolution with stakeholders.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART250	Introduction to Printmaking	Introduction to concepts and techniques involved in Fine Art field of Printmaking. Deals with three most basic Printmaking modes of Serigraphy, Woodcut, and Monoprinting in first part of course. Overview of Etching, Lithography and Papermaking in second part of course.	Prerequisites: A grade of C or better in ART111 and ART113.	L+L 3.0 6.0 6.0
ART251	Sculpture III	With emphasis on attention to individual problems and techniques	Prerequisites: A grade of C or better in ART152.	L+L 3.0 6.0 6.0
ART252	Sculpture IV	Advanced sculpture problems and professional practices	Prerequisites: A grade of C or better in ART251.	L+L 3.0 6.0 6.0
ART253	Woodcut	Focuses on relief method of printing, utilizing the techniques of Woodcut. Deals specifically with black and white images. Study of printing materials and tools, papers and printing methods. Relief printing in color introduced. Traditional forms of Woodcut, also an overview of innovative techniques in the field	Prerequisites: A grade of C or better in ART111 and ART113.	L+L 3.0 6.0 6.0
ART255	Art Marketing	Career goals, presentation of artist and art work (portfolio, resume, business cards, catalog), pricing and selling works, networking, establishing a studio, promotion and publicity, writing press releases, proposal writing, business ethics, artist rights, copyright law, contracts and agreements, royalties, record keeping, and communication skills	Prerequisites: None.	LEC 3.0 3.0 3.0
ART255AA	Self Promotion	Career goals, presentation of artist, communication skills, keeping files and records, developing self-promotional materials	Prerequisites: None.	LEC 1.0 1.0 1.0

ART255AB	The Portfolio	Choosing the right pieces to include, presenting art work, developing the portfolio.	Prerequisites: None.	LEC 1.0 1.0 1.0
ART255AC	Marketing Fine Art	Exhibitions and galleries, establishing a studio, alternative markets	Prerequisites: A grade of C or better in ART255AB or permission of Instructor.	LEC 1.0 1.0 1.0
ART256	Glass Fusing and Slumping III	Further study in the area of glass fusing and slumping with emphasis on advanced techniques and design considerations, such as, plates designed using different techniques, weaving or strip glass, and combining previous techniques to create projects.	Prerequisites: A grade of C or better in ART156.	L+L 3.0 6.0 6.0
ART257	Glass Fusing and Slumping IV	Further study of advanced glass fusing and slumping including problems, professional practices, personal expression and experimental research into various techniques.	Prerequisites: A grade of C or better in ART256.	L+L 3.0 6.0 6.0
ART258	Papermaking	Introduction to concepts and techniques of Fine Art Papermaking. Basic overview of historical origins of craft and importance of modern papermaking to fine arts	Prerequisites: A grade of C or better in ART111 and ART113.	L+L 3.0 6.0 6.0
ART259	Monoprinting	Introduction to concepts and techniques for Monoprintmaking. Deals with la prima technique used in painting in first part of course. Multi-plate printing and how method of printing relates to use of color and separation in second part of course	Prerequisites: A grade of C or better in ART111 and ART113.	L+L 3.0 6.0 6.0
ART261	Ceramics III	Emphasis on wheel throwing skill and individual style development	Prerequisites: A grade of C or better in ART162.	L+L 3.0 6.0 6.0
ART262	Ceramics IV	Experimental work in clays and glazes	Prerequisites: A grade of C or better in ART261.	L+L 3.0 6.0 6.0

ART263	Figure Painting	Study of the nude and clothed figure in painting with special attention upon relevant color palettes, direct and indirect figurative painting techniques, and development of anatomical knowledge and compositional structure. Students will draw upon both historical and contemporary modes of depicting the figure to develop a personalized approach to figure painting. Live models, photographs, drawings, "Planes of the Head" models, and the studio skeleton will be used as the basis of projects.	Prerequisites: A grade of C or better in ART167 or permission of Instructor.	L+L 3.0 6.0 6.0
ART264	Glass Casting	Further study of glass art with a focus on casting and kiln working, including problems, professional practices, personal expression and experimental application of various techniques.	Prerequisites: A grade of C or better in ART160.	L+L 3.0 6.0 6.0
ART265	Watercolor Painting III	Continuation of watercolor painting with emphasis on control and expression	Prerequisites: A grade of C or better in ART166.	L+L 3.0 6.0 6.0
ART266	Watercolor Painting IV	Advanced problems directed toward more personal expression	Prerequisites: A grade of C or better in ART265.	L+L 3.0 6.0 6.0
ART267	Painting III	Development of materials and techniques of painting. Individual problem-solving	Prerequisites: A grade of C or better in ART168 or permission of Instructor.	L+L 3.0 6.0 6.0
ART268	Painting IV	Advanced problem in painting. Study with greater emphasis on personal expression	Prerequisites: A grade of C or better in ART267 or permission of Instructor.	L+L 3.0 6.0 6.0
ART269AC	Digital Studio	Continued development of digital studio media with emphasis on advanced use of media techniques within a digital environment.	Prerequisites: A grade of C or better in (ADA/ART169 or ART170 or ART173 or ART179 or ART192 or ART274 or ART284 or ADA/ART289 or ART291) or permission of Instructor.	L+L 3.0 6.0 6.0
ART270	Digital Photographic Imaging II	Intermediate digital photographic imaging techniques. Refinement of aesthetic awareness and personal expression.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ADA/ART177.	L+L 3.0 6.0 6.0

ART271	Jewelry III	Emphasis on advanced jewelry design techniques and practices.	Prerequisites: A grade of C or better in ART172.	L+L 3.0 6.0 6.0
ART272	Jewelry IV	Emphasis on expanding repertoire of advanced jewelry design techniques and practices.	Prerequisites: A grade of C or better in ART271.	L+L 3.0 6.0 6.0
ART273AC	Special Topics: Multimedia Arts	Multimedia art studio course examining new and/or current topics in media and/or multimedia arts.	Prerequisites: Permission of Instructor.	L+L 3.0 6.0 6.0
ART274	Digital Photographic Imaging III	Advanced digital photographic imaging techniques. Advanced manipulation techniques of photographic images and time-based media. Continued development of aesthetic awareness and personal expression.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART270.	L+L 3.0 6.0 6.0
ART275	Lost Wax Casting I	Introduction to lost wax casting techniques for jewelry and small sculptures. Emphasis on design concepts as related to three-dimensional forms	Prerequisites: None.	L+L 3.0 6.0 6.0
ART276	Lost Wax Casting II	Advanced course in lost wax casting techniques for jewelry and small sculptures. Emphasis on the continuation of individual expression using the lost wax method	Prerequisites: A grade of C or better in ART275.	L+L 3.0 6.0 6.0
ART277	Textiles I	Introduction to exploration of textile media.	Prerequisites: A grade of C or better in ART112 or permission of Instructor.	L+L 3.0 6.0 6.0
ART279	Media Productions II	Intermediate digital media production techniques. Continued pre-production, production, and post-production skills. Exploration of types of productions including interviews, informational/how-to, marketing/product, and documentary/artistic media productions. Refinement of aesthetic awareness and personal expression.	Prerequisites: A grade of C or better in ART202 or permission of Instructor.	L+L 3.0 6.0 6.0

ART280AA	Digital Media Arts and Design Capstone	Focus on design, art, and development skills for a problem taken from business or industry. Includes practice-based capstone project focusing on a specific issue or need in digital media arts and design.	Prerequisites: Permission of Program Director or Instructor.	L+L 1.0 2.0 2.0
ART280AB	Digital Media Arts and Design Capstone	Focus on design, art, and development skills for a problem taken from business or industry. Includes practice-based capstone project focusing on a specific issue or need in digital media arts and design.	Prerequisites: Permission of Program Director or Instructor.	L+L 2.0 4.0 4.0
ART280AC	Digital Media Arts and Design Capstone	Focus on design, art, and development skills for a problem taken from business or industry. Includes practice-based capstone project focusing on a specific issue or need in digital media arts and design.	Prerequisites: Permission of Program Director or Instructor.	L+L 3.0 6.0 6.0
ART281	Graphic Design III	Advanced course in the process of graphic design and problem solving to meet customer specifications. Emphasis on steps needed to create and promote complex graphic design projects.	Prerequisites: A grade of C or better in ART182 or permission of Instructor.	L+L 3.0 6.0 6.0
ART282AA	Service-Learning Experience in Art	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
ART282AB	Service-Learning Experience in Art	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
ART282AC	Service-Learning Experience in Art	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
ART283	Digital Graphic Arts II	Advanced skill development of graphic design through use of microcomputer. Emphasis on computer design and techniques for producing all types of camera-ready advertising art for printed matter and package design. Includes illustration, typography, photo imaging, and color separation.	Prerequisites: A grade of C or better in ADA/ART183 or permission of Instructor.	L+L 3.0 6.0 6.0

ART284	Digital Animation II	Elements of electronic animation with interactive text graphics, photography, sound, film, and video construction.	Prerequisites: A grade of C or better in ADA/ART/MMT184 or permission of Instructor.	L+L 3.0 6.0 6.0
ART285	3D Modeling and Animation II	Advanced techniques for 3D modeling and computer animation. Creating and applying 2D background and 3D model textures, creating and applying special effects to models and animation, designing, modeling, and animating a digital 3D character from a character study.	Prerequisites: A grade of C or better in ART/MMT185.	L+L 3.0 6.0 6.0
ART286	Graphic Design IV	Continuing advanced course in the process of graphic design and problem solving to meet customer specifications. Emphasis on creating complex graphic design projects.	Prerequisites: A grade of C or better in ART281 or permission of Instructor.	L+L 3.0 6.0 6.0
ART287	3D Character Animation	3D-Character modeling and animation for multimedia, film, broadcast, video games and interactive entertainment. Character motion, editing, and blending electronic with traditional techniques.	Prerequisites: A grade of C or better in ADA/ART/MMT184 or ART180AC. Corequisites: ART116 or permission of Instructor.	L+L 3.0 6.0 6.0
ART288	PDF Portable Document Format	Focuses on complexity, versatility and creation of a PDF file. Emphasis on the importance of the settings regarding color management, compression, and output. Includes fillable forms and interactive files with audio and video capabilities, editing functions, preflight abilities and security.	Prerequisites: A grade of C or better in ADA/ART175 or permission of Instructor.	L+L 3.0 6.0 6.0
ART289	Computer Illustration	Introduction to the multiple elements of commercial illustration using the microcomputer. Basic foundation in the use of computer techniques including color paint and draw programs for the production of commercial illustrations for publications and printed matter. Use of input and output devices.	Prerequisites: A grade of C or better in ART100 or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290AA	Studio Art	Studio course for art majors allowing continuation in a subject field.	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0



ART290AB	Studio Art	Studio course for art majors allowing continuation in a subject field.	Prerequisites: Permission of Instructor.	L+L 2.0 4.0 4.0
ART290AC	Studio Art	Studio course for art majors allowing continuation in a subject field.	Prerequisites: Permission of Instructor.	L+L 3.0 6.0 6.0
ART290BC	Studio Art: Drawing	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART111 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290CC	Studio Art: Mixed Media	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART112 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290DC	Studio Art: Life Drawing	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART117 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290EC	Studio Art: Photography	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART132 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290FF	Studio Art: Sculpture	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART252 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290GC	Studio Art: Ceramics	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART162 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290HC	Studio Art: Watercolor	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART166 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290JC	Studio Art: Color	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART113 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290KC	Studio Art: Glazing Techniques	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART162 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290LC	Studio Art: Clay Bodies	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART162 or permission of Instructor.	L+L 3.0 6.0 6.0

ART290MC	Studio Art: Digital Photography	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART143 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290PC	Studio Art: Painting	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART168 or permission of Instructor.	L+L 3.0 6.0 6.0
ART290WC	Studio Art: Woodworking	Studio course for art majors allowing continuation in a subject field.	Prerequisites: A grade of C or better in ART154 or permission of Instructor.	L+L 3.0 6.0 6.0
ART291	Digital Prepress	Introduction to fundamental concepts of digital prepress necessary for the designer to create digital documents for accurate output and reproduction.	Prerequisites: A grade of C or better in ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
ART292	Digital Output Prepress	Introduction to prepress for digital output. Foundation of job costing and the functions of a job ticket for proper file preparation including trapping, color management, file transfers, workflow, RIPping, imposition and file proofing.	Prerequisites: A grade of C or better in ART291 or permission of Instructor.	L+L 3.0 6.0 6.0
ART293	Digital Output	Emphasis on setup, operation, and maintenance of a digital press. Introduction to specialty and common substrates and inks. Instruction on quality control, troubleshooting techniques, and proper safety precautions for press, equipment, and consumables.	Prerequisites: Permission of Instructor.	L+L 3.0 6.0 6.0
ART295AC	Art Workshop/Seminar: Drawing	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 3.0 6.0 6.0
ART295BA	Art Workshop/Seminar: Sculpture	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 1.0 2.0 2.0

ART295BC	Art Workshop/Seminar: Sculpture	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 3.0 6.0 6.0
ART295CA	Art Workshop/Seminar: Life Drawing	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 1.0 2.0 2.0
ART295DA	Art Workshop/Seminar: Photography	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 1.0 2.0 2.0
ART295DB	Art Workshop/Seminar: Photography	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 2.0 4.0 4.0
ART295DC	Art Workshop/Seminar: Photography	Advanced-level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 3.0 6.0 6.0
ART295EA	Art Workshop/Seminar: Painting	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 1.0 2.0 2.0
ART295EC	Art Workshop/Seminar: Painting	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 3.0 6.0 6.0

ART295GA	Art Workshop/Seminar: Ceramics	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 1.0 2.0 2.0
ART295GB	Art Workshop/Seminar: Ceramics	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 2.0 4.0 4.0
ART295GC	Art Workshop/Seminar: Ceramics	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 3.0 6.0 6.0
ART295HC	Art Workshop/Seminar: Mixed Media	Advanced level workshop seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 3.0 6.0 6.0
ART295KA	Art Workshop/Seminar: Graphics/Animation	Advanced level workshop/seminar in art disciplines	Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 1.0 2.0 2.0
ART295LA	Art Workshop/Seminar: Glazing Techniques	Advanced level workshop seminar in art disciplines	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0
ART295LB	Art Workshop/Seminar: Glazing Techniques	Advanced level workshop seminar in art disciplines	Prerequisites: Permission of Instructor.	L+L 2.0 4.0 4.0
ART295LC	Art Workshop/Seminar: Glazing Techniques	Advanced level workshop seminar in art disciplines	Prerequisites: Permission of Instructor.	L+L 3.0 6.0 6.0
ART295MC	Art Workshop/Seminar: Clay Bodies	Advanced level workshop seminar in art disciplines	Prerequisites: Permission of Instructor.	L+L 3.0 6.0 6.0

ART295NA	Art Workshop/Seminar: Glass Blowing	Advanced level workshop seminar in art disciplines.	Prerequisites: Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field or permission of Department or Division Chair.	L+L 1.0 2.0 2.0
ART295XA	Art Workshop/Seminar: Digital Photography	Advanced level workshop seminar in digital photography disciplines.	Prerequisites: A grade of C or better in ART143 or permission of Instructor.	L+L 1.0 2.0 2.0
ART295XB	Art Workshop/Seminar: Digital Photography	Advanced level workshop seminar in digital photography disciplines.	Prerequisites: A grade of C or better in ART143 or permission of Instructor.	L+L 2.0 4.0 4.0
ART295XC	Art Workshop/Seminar: Digital Photography	Advanced level workshop seminar in digital photography disciplines.	Prerequisites: A grade of C or better in ART143 or permission of Instructor.	L+L 3.0 6.0 6.0
ART296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ART296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

ART296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
ART296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
ART297AA	Commercial Art Internship	Digital design, development, and photographic imaging work experience in a business or industry. 80 hours of designated work.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 1.0
ART297AB	Commercial Art Internship	Digital design, development, and photographic imaging work experience in a business or industry. 160 hours of designated work.	Prerequisites: Permission of Department or Division.	L+L 2.0 2.0 0.0
ART297AC	Commercial Art Internship	Digital design, development, and photographic imaging work experience in a business or industry. 240 hours of designated work.	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 0.0

ART298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ART298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ART298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ASB100	Introduction to Global Health	The study of human health patterns at an international and local scale. Focus on pressing global health challenges that the world faces today are examined from a broad social, ecological, and cultural context.	Prerequisites: None.	LEC 3.0 3.0 3.0

ASB102	Introduction to Cultural Anthropology	Principles of cultural anthropology, with illustrative materials from a variety of cultures. The nature of culture; social, political, and economic systems; religion, aesthetics and language.	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB202	Ethnic Relations in the United States	Basic concepts and processes, including historic overview, of interethnic relations in the United States: culture, race, ethnicity, ethnocentrism, prejudice, discrimination, racism, assimilation, acculturation, and individual and group responses to interethnic contact. Cultural knowledge and intercultural communication skills and perspectives as fundamental tools for successful management of social relations in a multicultural world.	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB211	Women in Other Cultures	Cross-cultural analysis of the economic, social, political, and religious factors that affect women's status in traditional and modern societies	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB214	Magic, Witchcraft and Healing: An Introduction to Comparative Religion	Origins, elements, and forms of religion; a comparative survey of religious beliefs, myths, rituals and symbolism including magic, witchcraft and healing as practiced in selected regions of the world; the place of religion in the total culture	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB220	Anthropology Goes to the Movies	Archaeology and anthropology through the lens of popular films of the 20th and 21st Century. Explores the popularity of ancient humans as a topic for film ventures and how accurately they are portrayed. Provides the student with a basic knowledge of anthropology and offers film images of anthropologists and archaeologists and the practice of archaeology and anthropology. Analyzes accuracy of films depicting culture and our human past.	Prerequisites: None.	LEC 3.0 3.0 3.0



ASB222	Buried Cities and Lost Tribes: Old World	Introduction to archaeology through discoveries and the researchers who made them. Emphasis on methods of archaeological fieldwork and what these discoveries reveal about humanity, including the nature of archaeological inquiry, the development of human social groups, the changing role of religion in evolving societies, the origins of agriculture, the origins of settled lifeways, the rise of cities and complex societies, political strife across different cultures and the forces which tend to fragment societies. Examples drawn from Africa, Asia, Europe, the Pacific Islands, and Australia	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB223	Buried Cities and Lost Tribes: New World	Introduction to archaeology through discoveries and the researchers who made them. Emphasis on methods of archaeological fieldwork and what these discoveries reveal about humanity, including the nature of archaeological inquiry, the development of human social groups, the changing role of religion in evolving societies, the origins of agriculture, the origins of settled lifeways, the rise of cities and complex societies, political strife across different cultures and the forces which fragment societies. Examples drawn from North America, Central America, and South America.	Prerequisites: None.	LEC 3.0 3.0 3.0

ASB226	Human Impacts on Ancient Environments	Interrelationship between humans and their environments, using archaeological data and case studies beginning with early hominids. Uses of research to identify environmental change and distinguish between climatic and human-induced global change. Explores ways in which prehistoric people caused and responded to environmental changes	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB230	Principles of Archaeology	Introduction to archaeological methods and theory	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB231	Archaeological Field Methods	Excavation of an archaeological site; recording and interpreting data collected during the field experience. Overview of the cultures concerned; contemporary issues in archaeology.	Prerequisites: None.	L+L 4.0 6.0 6.0
ASB234	Art and Archaeology of Ancient Egypt	Introduction to the major social, political, religious and economic institutions of Ancient Egypt. The historical events and people that shaped Egyptian civilization	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB235	Southwest Archaeology	Anthropological perspective and comparative study of the cultures of prehistoric native peoples of the North American southwest	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB238	Archaeology of N America	Introduction to North American prehistory	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB245	Indians of the Southwest	Comparative study of the cultures, including the histories and present status, of Indians of the Southwest	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB251	Introduction to Museums	The changing nature of museum practice in acquiring and managing collections and disseminating information	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB252	Sports and Culture	Cross-cultural examination of symbolic and social dimensions of sports, past and present.	Prerequisites: None.	LEC 3.0 3.0 3.0

ASB253	Death and Dying Across Cultures	Responses to death and dying in cultures around the world. Explanations for particular cultural responses to death and dying. Examples drawn from ancient and contemporary cultures	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB254	Culture and Mass Communication	Investigation of mass communication as one of the greatest forces in the transmission and transformation of culture. Exploration of the effects of a variety of mass communication technologies - visual images, printed matter, and electronic media - on human behavior, attitudes, and value systems. The ways in which different culture contexts direct and shape innovations in communication technologies is also pursued	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB256	Cross-Cultural Perspectives: Warfare and Violence	Exploration of violent behavior patterns, especially warfare, through cross-cultural comparison. Analysis of gender participation, frequency and intensity, and causes for variation in the expression of violence. Comparison of traditional and modern styles of warfare with respect to the role of technology, population growth, and globalization. Review of origins of warfare and choice of violent over non-violent strategies for conflict resolution	Prerequisites: None.	LEC 3.0 3.0 3.0
ASB276	Nature of Language	Introduction to basic concepts of linguistic anthropology and implications for study of culture and society	Prerequisites: A grade of C or better in ASB102.	LEC 3.0 3.0 3.0
ASB282AA	Service-Learning Experience in Anthropology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
ASB282AB	Service-Learning Experience in Anthropology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0

ASB282AC	Service-Learning Experience in Anthropology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
ASB298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ASB298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ASB298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

ASD100	Foundations of Addictions and Substance Use Disorders	Introduction to the foundations of the alcohol and drug abuse rehabilitation field. Emphasis on the roles and responsibilities of the addictions counselor, ethical issues, pharmacology, family dynamics, dual diagnosis, intervention techniques, self-help groups, levels of care, symptom identification, and conducting alcohol/drug histories. Interactive work stressed.	Prerequisites: None.	LEC 3.0 3.0 3.0
ASD102	Communication Skills in Treating Addiction	Further examination and refinement of communication and beginning professional counseling skills as they relate to the addicted client and family members. Emphasis on practicing the application of these skills to various situations associated with treatment planning. Recordkeeping/documentation skills emphasized.	Prerequisites: None.	LEC 3.0 3.0 3.0
ASD110	Pharmacology of Substances of Abuse and Dependency	Exploration of the pharmacology of substance of abuse and dependency. Examines the effects of psychopharmacological chemicals on human physiology. Emphasis on identification and management of substances of abuse and dependency.	Prerequisites: None.	LEC 3.0 3.0 3.0
ASD120	Professional Ethics in Addictions and Substance Use Disorders	Exploration of topics relative to the professional and ethical development of the addictions and substance use disorders counselor, including codes of ethics, confidentiality laws, professionalism and boundary issues, and the meeting of individual counselor needs within the field.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD130	Legal Aspects of Addiction	Exploration of the interface between the legal/criminal justice systems and the addicted individual or service provider. Specific legal implications of addictions and substance use disorders counseling.	Prerequisites: None.	LEC 1.0 1.0 1.0

ASD145	AIDS and Addiction	Exploration of AIDS and its relationship to addiction. Emphasis on myths and realities of AIDS, personal values, feelings, and limitations and treatment goals.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD146	Peer Support Specialist	Introduction to the role and foundational responsibilities of a peer support specialist in the field of addictions and substance use. Explores basic pharmacology, ethics, case management, and crisis management. Recovery-Oriented Systems of Care (ROSC) is emphasized.	Prerequisites: None. Corequisites: ASD147.	LEC 4.0 4.0 4.0
ASD147	Peer Support Specialist Practicum	Peer support specialist preparation related to addictions and substance use disorders. Opportunity for students to use their developed knowledge and skills in an applied setting with supervision.	Prerequisites: None. Corequisites: ASD146.	LAB 3.0 5.0 5.0
ASD148	Introduction to the Science of Prevention	Overview of the science underlying evidence-based prevention interventions and strategies and the effective application of these approaches in prevention practice.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD149	Physiology and Pharmacology for Prevention	Overview of the physiology and pharmacology of psychoactive substances and their effects on the brain to affect mood, cognition, and behavior and the consequences of such use on the individual, family, and community.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD150	Principles of Self-Help Groups	Overview of the fundamental principles, concepts and historical antecedents of the various self-help groups. Emphasis on the self-help groups of Alcoholics Anonymous, Al-anon, Alateen, Narcotics Anonymous, Co-dependents Anonymous, and Adult Children of Alcoholics.	Prerequisites: None.	LEC 2.0 2.0 2.0

ASD150AA	Principles of Self-Help Groups Level I	Fundamental principles, concepts and historical antecedents of various self-help groups. Emphasis on the self-help groups of Alcoholics Anonymous, Al-anon, Alateen, Narcotics Anonymous, Co-dependents Anonymous, and Adult Children of Alcoholics.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD150BA	Principles of Self-Help Groups Level II	Overview of self-help groups including the various formats, use of slogans, and role of sponsors. Analysis of the twelve steps and relapse also covered.	Prerequisites: A grade of C or better in ASD150AA or Corequisites: ASD150AA.	LEC 1.0 1.0 1.0
ASD151	Prevention Interventions and Policies	Overview of primary evaluation methods used to measure evidence-based prevention interventions and gives guidance in applying them to "real-world" prevention settings.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD152	Family-Based Prevention Interventions	Overview of the family as the primary socialization agent of children, the science behind family-based prevention interventions, and the application of such evidence-based approaches to help prevent the onset of substance use in children.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD153	School-Based Prevention Interventions	Overview of the role of the school in society, the science behind school-based prevention interventions, and the application of such evidence-based approaches in school settings around the world.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD154	Workplace-Based Prevention Interventions	Overview of the role of work and the workplace in society, how stressors and other work-related influences affect risk of substance use, the science behind workplace prevention interventions, and the application of such evidence-based approaches in work settings around the world.	Prerequisites: None.	LEC 1.0 1.0 1.0

ASD155	Environment-Based Prevention Interventions	Overview of the science underlying evidence-based substance use prevention using environmental interventions, involving policy, and community-wide strategies.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD156	Media-Based Prevention Interventions	Overview of the science underlying the use of media for substance use prevention interventions.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD157	Community-Based Prevention Implementation Systems	Overview of the science underlying the systems approach to prevention interventions and guidance for developing such approaches, as well as exemplars of evidence-based drug use prevention systems.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD158	Gambling Disorders Prevention	Overview of gambling disorders prevention. Emphasis on current prevention research. Also includes information on gambling prevention resources.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD159	Adolescent Substance Use Prevention	Adolescent substance use prevention issues. Emphasis on current and developing adolescent prevention information. Covers common adolescent substance use characteristics and prevention strategies.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD160	Behavioral Addictions Prevention	Overview of behavioral addictions prevention issues. Emphasis on current research. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD161	Beginning Clinical Documentation Skills	Overview of addictions and substance use disorders counseling, interviewing, and documentation. Includes record keeping and documentation skills. Alcohol and drug abuse counselor core functions emphasized.	Prerequisites: None.	LEC 3.0 3.0 3.0



ASD165	Theories and Techniques in the Treatment of Addictions	Overview of counseling theories including the application to addictions and substance use disorders groups. Recordkeeping skills and beginning counseling skills emphasized.	Prerequisites: None.	LEC 2.0 2.0 2.0
ASD165AA	Theories and Techniques in the Treatment of Addictions Level I	Overview of beginning addictions and substance use disorders counseling skills and counseling theories. Covers issues of cross-addiction, transference, and counter transference.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD165BA	Theories and Techniques in the Treatment of Addictions Level II	Application of counseling theories to addictions and substance use disorders groups. Includes crisis intervention and client abuse as well as client documentation and feedback. Ethical and legal issues also covered.	Prerequisites: A grade of C or better in ASD165AA or Corequisites: ASD165AA.	LEC 1.0 1.0 1.0
ASD185	Addictions Seminar	Special topics in addictions and substance use disorders with an emphasis on current issues not covered in other addictions and substance use disorders courses.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD215	Adult Children of Alcoholics	Exploration of current research and issues related to the major adjustment problems of adult children of alcoholics. Emphasis placed on etiology, characteristics, post-traumatic stress, family systems, and treatment.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD220	Family Dynamics and Addiction	Analysis of the impact of addictions on all the members of a family. Interviewing, assessment and therapeutic approaches particularly useful for these family members presented.	Prerequisites: None.	LEC 3.0 3.0 3.0
ASD226	Counseling Multicultural and Diverse Populations	Exploration of influences of culture and diversity on addictions and substance abuse. Emphasis on recovery and therapeutic relationships.	Prerequisites: None.	LEC 3.0 3.0 3.0

ASD236	Relapse, Recovery, and Addiction	Review of the bio-psycho-social processes of recovery and relapse in addictions. Exploration into those factors that both contribute to and inhibit recovery and relapse.	Prerequisites: None.	LEC 2.0 2.0 2.0
ASD240	Human Sexuality and Addiction	An introduction to the role that addiction plays in human sexuality. Relationship dysfunctions stemming from or occurring with addiction. Sexual performance dysfunctions resulting from physiological/psychological effects of chronic substance abuse.	Prerequisites: Student must be 18 years or older.	LEC 2.0 2.0 2.0
ASD245	Co-Occurring Disorders	Examines co-occurring disorders from the bio-psycho-social model. Includes causes, consequences, assessment, and treatment, emphasizing the psychoeducational model of treatment.	Prerequisites: None.	LEC 2.0 2.0 2.0
ASD250	Group Interventions	Focus on group dynamics and group process as they relate to addictions and substance use disorders. Exploration of group developmental stages, family intervention models, various counseling approaches/techniques and their application to therapeutic, education and family groups.	Prerequisites: None.	LEC 3.0 3.0 3.0
ASD265	Co-Dependency	Theory and application of current research in co-dependency, a recognizable pattern of dysfunctional personality traits, predictably found within most members of families of an addict. Emphasis on characteristics, techniques for evaluation, intervention, and treatment.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD275	Advanced Theory and Techniques in the Treatment of Addiction Disorders	Capstone course for level two certificate in addictions and substance use disorders program. Focus on counseling theories and techniques used by counselors as they relate to the client and family members.	Prerequisites: A grade of C or better in ASD220, ASD226, ASD245 and ASD250 or permission of Instructor.	LEC 3.0 3.0 3.0

ASD280	Addictions and Substance Use Disorders Practicum	Opportunity for advanced students to use his/her developed knowledge and skills in an applied setting with supervision.	Prerequisites: A grade of C or better in ASD275 or permission of Department or Division.	LAB 6.0 18.0 18.0
ASD284	Current Issues and Addictions Seminar	Special topics in addictions and substance use disorders with an emphasis on current issues not covered in other addictions and substance use disorders courses.	Prerequisites: None.	LEC 0.5 0.5 0.5
ASD285	Addictions Seminar	Special topics in addictions and substance use disorders with an emphasis on current issues not covered in other addictions and substance use disorders courses.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285AA	Treatment for Stimulant Use Disorders Seminar	Stimulant use disorder treatment issues. Emphasis on current and developing treatment information. Covers common stimulant abuse characteristics and treatment strategies. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285BB	Adolescent Substance Abuse Treatment Seminar	Adolescent substance abuse treatment issues. Emphasis on current and developing treatment information. Covers common adolescent substance abuse characteristics and treatment strategies. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285CC	Addiction Review Seminar	A brief review of current addiction issues. Emphasis on current and developing treatment information. Covers common alcohol and drug addiction characteristics and treatment strategies. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285DD	Motivation for Change in Substance Abuse Treatment Seminar	Issues regarding motivational change in substance abuse treatment. Emphasis on current and developing treatment information. Covers common motivational change techniques. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0

ASD285EE	Domestic Violence and Substance Abuse Seminar	Domestic violence and substance abuse treatment issues. Emphasis on current and developing domestic violence and substance abuse information. Covers techniques, strategies, and treatment modalities for domestic violence and substance abuse patients. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285FF	Street Drugs Seminar	Street drug issues. Emphasis on current and developing street drug information. Covers techniques strategies and treatment modalities for street drug abuse patients. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285GG	Addictive and Medical Plants Seminar	Addictive and medical plant issues. Emphasis on current and developing addictive and medical plant information. Covers addictive and medical plant typology. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285HH	Intervention and Treatment for Addictions and Substance Use Disorders Seminar	Brief interventions and treatment for addictions and substance use disorders. Emphasis on current and developing intervention and treatment information. Covers treatment and intervention techniques for use with addictions and substance use disorders. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285II	Multicultural Aspects	Multicultural aspects of counseling in addictions and substance use disorders. Emphasis on current and developing treatment information. Covers common aspects of multicultural characteristics and treatment strategies. Also explores ethical counselor/client relationships.	Prerequisites: None.	LEC 1.0 1.0 1.0

ASD285JJ	Clinical Supervision Training of Supervisors	Clinical supervision training of supervisor issues. Emphasis on current and developing treatment information. Also includes community resource information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285KK	Recovery-Oriented Systems of Care Seminar	Overview of recovery-oriented systems of care programs. Covers research, development, and characteristics of programs in addition to applicable federal mandates.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285LL	Gambling Addiction Seminar	A brief review of gambling addiction issues. Emphasis on current research, intervention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285MM	Sexual Addiction Seminar	A brief review of sexual addiction issues. Emphasis on current research, intervention, and treatments in the field. Also includes community resources information.	Prerequisites: Student must be 18 years or older.	LEC 1.0 1.0 1.0
ASD285NN	Eating Disorders Seminar	An overview of issues associated with eating disorders. Emphasis on current research, intervention, prevention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285OO	Eating Disorders: Special Considerations and Populations Seminar	A review of issues associated with eating disorders within diverse populations. Emphasis on multicultural populations, current research, intervention, prevention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285PP	Eating Disorders: Conceptualization and Treatment Seminar	A review of issues associated with eating disorders. Emphasis on current research, intervention, prevention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0

ASD285QQ	Behavioral Addictions Seminar	A review of issues associated with behavioral addictions. Emphasis on current research, intervention, prevention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285RR	Behavioral Addictions Seminar: Internet-Related Addictions	A review of issues associated with internet-based behavioral addictions. Emphasis on diagnostic descriptions and considerations for internet-based addictions including current research, intervention, prevention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285SS	Marijuana Addiction Seminar	An overview of issues associated with marijuana addiction. Emphasis on current research, intervention, prevention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD285TT	Opioid Addiction Seminar	An overview of issues associated with opioid addiction. Emphasis on current research, intervention, prevention, and treatments in the field. Also includes community resources information.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASD295	Advanced Foundations: Addictions and Substance Use Disorders Counselor Licensing/Certification Exams	Review for individuals preparing for addictions and substance use disorders counselor licensing and/or certification exams. Emphasis on ethics, treatment, pharmacology, family issues, and self-help groups.	Prerequisites: None.	LEC 3.0 3.0 3.0

ASD296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the instructor.	LAB 1.0 5.0 0.0
ASD296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the instructor.	LAB 2.0 10.0 0.0
ASD296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the instructor.	LAB 3.0 15.0 0.0

ASD296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student's major or career interest or with permission of the instructor.	LAB 4.0 20.0 0.0
ASD298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ASD298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0



ASD298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ASE101	Introduction to Automotive	Introduction to the standards of the automotive industry as well as an overview of the major automotive systems, safety practices, workplace habits, tools and equipment.	Prerequisites: None.	L+L 2.0 3.0 3.0
ASE102	Automotive Express Service	Use of standard service publications; performance of commonly used service operations following published service procedures; emphasis on good attitude development and safety habits about automotive service.	Prerequisites: None.	L+L 2.0 4.0 4.0
ASE102AU	Automotive Express Service	Use of standard service publications; performance of commonly used service operations following published service procedures; emphasis on good attitude development and safety habits about automotive service.	Prerequisites: None.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE111	Engine Diagnosis and Inspection	Diagnosis and inspection of automotive internal combustion engines.	Prerequisites: None.	L+L 2.0 4.0 4.0
ASE111AU	Engine Diagnosis and Inspection	Diagnosis and inspection of automotive internal combustion engines.	Prerequisites: None.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE113	Engine Repair	Diagnosis, disassembly, repair and reassembly of automotive internal combustion engines.	Prerequisites: None.	L+L 4.0 8.0 8.0
ASE113AU	Engine Repair	Diagnosis, disassembly, repair and reassembly of automotive internal combustion engines.	Prerequisites: None.	LEC 4.0 2.0 2.0 LAB 0.0 6.0 6.0

ASE121	Automatic Transmission and Transaxle	Principles of automotive operation, servicing and repair procedures for automatic transmissions / transaxles; includes diagnostics and testing of mechanical, electrical, and hydraulic components.	Prerequisites: None.	L+L 4.0 8.0 8.0
ASE121AU	Automatic Transmission and Transaxle	Principles of automotive operation, servicing and repair procedures for automatic transmissions / transaxles; includes diagnostics and testing of mechanical, electrical, and hydraulic components.	Prerequisites: None.	LEC 4.0 2.0 2.0 LAB 0.0 6.0 6.0
ASE131	Manual Drive Trains and Axles	Operation, diagnosis, service, and repair of the automotive powertrain. Includes manual transmissions/transaxles, clutches, drive axles, driveshafts, differentials, four-wheel drive, and all-wheel drive.	Prerequisites: None.	L+L 4.0 8.0 8.0
ASE131AU	Manual Drive Trains and Axles	Operation, diagnosis, service, and repair of the automotive powertrain. Includes manual transmissions/transaxles, clutches, drive axles, driveshafts, differentials, four-wheel drive, and all-wheel drive.	Prerequisites: None.	LEC 4.0 2.0 2.0 LAB 0.0 6.0 6.0
ASE141	Steering, Suspension and Pre-Alignment	Principles and operation of automotive suspension and steering systems.	Prerequisites: None.	L+L 2.0 4.0 4.0
ASE141AU	Steering, Suspension and Pre-Alignment	Principles and operation of automotive suspension and steering systems.	Prerequisites: None.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE151	Introduction to Brake Systems	Fundamentals and operation of automotive braking systems. Includes training in service, testing, and repair of basic brake and brake-related components.	Prerequisites: None.	L+L 2.0 4.0 4.0
ASE151AU	Introduction to Brake Systems	Fundamentals and operation of automotive braking systems. Includes training in service, testing, and repair of basic brake and brake-related components.	Prerequisites: None.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE161	Basic Automotive Electrical/Electronics	The basic principles of automotive electricity and electrical systems.	Prerequisites: None.	L+L 2.0 3.0 3.0

ASE161AU	Basic Automotive Electrical/Electronics	The basic principles of automotive electricity and electrical systems.	Prerequisites: None.	LEC 2.0 1.0 1.0 LAB 0.0 2.0 2.0
ASE162	Automotive Battery, Starting and Charging Systems	The principles of operation, testing and diagnosis of automotive battery, starting and charging systems.	Prerequisites: A grade of C or better in ASE161, or permission of Instructor.	L+L 2.0 3.0 3.0
ASE162AU	Automotive Battery, Starting and Charging Systems	The principles of operation, testing and diagnosis of automotive battery, starting and charging systems.	Prerequisites: A grade of C or better in ASE161, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 2.0 2.0
ASE171	Automotive Heating, Ventilation and Air Conditioning Systems	The theory and operation of automotive heating, ventilation and air conditioning systems. Training in diagnosis, service and repair of these systems.	Prerequisites: None.	L+L 3.0 7.0 7.0
ASE171AU	Automotive Heating, Ventilation and Air Conditioning Systems	The theory and operation of automotive heating, ventilation and air conditioning systems. Training in diagnosis, service and repair of these systems.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 5.0 5.0
ASE181	Introduction to Engine Performance	An introductory course in automotive engine performance as it relates to the construction and operating principles of automotive internal combustion engines, fuel systems, ignition systems, and the related lubrication and cooling systems.	Prerequisites: None.	L+L 2.0 4.0 4.0
ASE181AU	Introduction to Engine Performance	An introductory course in automotive engine performance as it relates to the construction and operating principles of automotive internal combustion engines, fuel systems, ignition systems, and the related lubrication and cooling systems.	Prerequisites: None.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE182	Fundamentals of Automotive Fuel/Air and Ignition Systems	The theory and fundamentals of automotive fuel/air delivery and ignition systems. The proper diagnosis and repair of the fuel/air delivery and ignition systems.	Prerequisites: A grade of C or better in ASE181, or permission of Instructor.	L+L 2.0 4.0 4.0 0.0
ASE182AU	Fundamentals of Automotive Fuel/Air and Ignition Systems	The theory and fundamentals of automotive fuel/air delivery and ignition systems. The proper diagnosis and repair of the fuel/air delivery and ignition systems.	Prerequisites: A grade of C or better in ASE181, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0

ASE241	Advanced Steering, Suspension and Alignment	Advanced automotive principles of suspension and steering systems. Diagnosis, service and repair procedures, with emphasis on four-wheel alignment.	Prerequisites: A grade of C or better in ASE141, or permission of Instructor.	L+L 2.0 4.0 4.0
ASE241AU	Advanced Steering, Suspension and Alignment	Advanced automotive principles of suspension and steering systems. Diagnosis, service and repair procedures, with emphasis on four-wheel alignment.	Prerequisites: A grade of C or better in ASE141, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE251	Advanced Brake Systems	The operation, diagnosis, service and repair of advanced automotive brake systems.	Prerequisites: A grade of C or better in ASE151, or permission of Instructor.	L+L 2.0 4.0 4.0
ASE251AU	Advanced Brake Systems	The operation, diagnosis, service and repair of advanced automotive brake systems.	Prerequisites: A grade of C or better in ASE151, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE261	Automotive Electrical Diagnostics and Repair	Principles of automotive electrical diagnostics and repair.	Prerequisites: A grade of C or better in ASE162, or permission of Instructor.	L+L 2.0 4.0 4.0
ASE261AU	Automotive Electrical Diagnostics and Repair	Principles of automotive electrical diagnostics and repair.	Prerequisites: A grade of C or better in ASE162, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE262	Automotive Electronic Control Systems	Principles and operation of automotive electronics and electronic control systems.	Prerequisites: A grade of C or better in ASE261, or permission of Instructor.	L+L 2.0 4.0 4.0
ASE262AU	Automotive Electronic Control Systems	Principles and operation of automotive electronics and electronic control systems.	Prerequisites: A grade of C or better in ASE261, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE263	Hybrid Vehicle Overview	Automotive hybrid vehicle design and operation. Safety practices as suggested by manufacturers for servicing hybrid vehicle.	Prerequisites: A grade of C or better in ASE101.	L+L 2.0 4.0 4.0
ASE264	Automotive Electrical/Electronic Systems III	Designed for the advanced automotive student, this course covers the automotive computer, multiple computer systems, and automotive computer networks.	Prerequisites: A grade of C or better in ASE161 and ASE162, or permission of Instructor.	L+L 3.0 5.0 5.0

ASE265	Introduction to Electric Drive Vehicles	Designed for the advanced automotive student, this course introduces the theory and operation of electric vehicles including electric drive, hybrid, and fuel cell electric vehicles.	Prerequisites: A grade of C or better in ASE161 and ASE162, or permission of Instructor.	L+L 3.0 5.0 5.0
ASE266	Electric/Hybrid Vehicle High Voltage Batteries	This course covers the safety, operation, testing, diagnosis, and repair of electrical and hybrid high voltage batteries.	Prerequisites: A grade of C or better in ASE161 and ASE162, or permission of Instructor.	L+L 1.0 2.0 2.0
ASE267	Electric Vehicle Operation and Diagnosis	Covers the operation and diagnosis of electric/hybrid vehicles.	Prerequisites: A grade of C or better in ASE161 and ASE162, or permission of Instructor.	L+L 3.0 5.0 5.0
ASE281	Computerized Automotive Engine Control Systems	The theory of computerized engine control systems as they relate to engine performance and emissions control.	Prerequisites: A grade of C or better in ASE261 and ASE182, or permission of Instructor.	L+L 2.0 4.0 4.0
ASE281AU	Computerized Automotive Engine Control Systems	The theory of computerized engine control systems as they relate to engine performance and emissions control.	Prerequisites: A grade of C or better in ASE182, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE282	Advanced Engine Performance Diagnosis	Diagnosis and repair of emission and engine control systems. Emphasizes the proper diagnosis, documentation, and repair of systems faults.	Prerequisites: A grade of C or better in ASE261 and ASE281, or permission of Instructor.	L+L 2.0 4.0 4.0
ASE282AU	Advanced Engine Performance Diagnosis	Diagnosis and repair of emission and engine control systems. Emphasizes the proper diagnosis, documentation, and repair of systems faults.	Prerequisites: A grade of C or better in ASE261 and ASE281, or permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
ASE290AA	Automotive Service Internship	Automotive work experience in the automotive service industry.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 0.0
ASE290AB	Automotive Service Internship	Automotive work experience in the automotive service industry.	Prerequisites: Permission of Department or Division.	L+L 2.0 2.0 0.0
ASE290AC	Automotive Service Internship	Automotive work experience in the automotive service industry.	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 0.0

ASE296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 1.0 5.0 0.0
ASE296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 2.0 10 0.0
ASE296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 3.0 15 0.0

ASE296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 4.0 20 0.0
ASE298AA	Special Projects	An organized and tailored activity around the interests and needs of the individual student. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ASE298AB	Special Projects	An organized and tailored activity around the interests and needs of the individual student. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ASE298AC	Special Projects	An organized and tailored activity around the interests and needs of the individual student. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ASL090AA	Speedy American Sign Language I	Introduction of techniques for communicating with deaf people using American Sign Language (A.S.L.). Expressive and receptive sign skills, manual alphabet, numbers, and basic sign vocabulary.	Prerequisites: None. ASL103 suggested but not required.	LEC 1.0 1.0 1.0

ASL090AB	Speedy American Sign Language II	Use American Sign Language (ASL) to converse about feelings, family members, other people, clothing, events according to proper tense, and to count to one hundred.	Prerequisites: A grade of C or better in ASL090AA. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
ASL101	American Sign Language I	Introduction of principles, methods, and techniques for communicating with deaf people who sign. Development of expressive and receptive sign skills, manual alphabet, numbers, and sign vocabulary. Overview of syntax, grammar, and culture related to American Sign Language (A.S.L.).	Prerequisites: None. ASL103 suggested as a corequisite but not required.	LEC 4.0 4.0 4.0
ASL102	American Sign Language II	Continued development of knowledge and language skills for communicating with deaf people who sign. Includes numbers, fingerspelling, and culture. Emphasis on enhancement of receptive sign skills and continued development of expressive sign skills. Application of rudimentary, syntactical, and grammatical structure stressed with continued development of sign vocabulary.	Prerequisites: A grade of C or better in ASL101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
ASL103	Introduction to the Deaf Community	History and development of American Sign Language (ASL) and English codes. Overview of education for Deaf and Hard of Hearing children. Legal rights and common adaptive devices used by Deaf and Hard of Hearing individuals.	Prerequisites: None.	LEC 1.0 1.0 1.0
ASL105	Survey of the Interpreting Profession	Survey of the field of sign language interpreting. Overview of cultural, historical and sociological framework for the principles, ethics, roles, responsibilities, and standard practices of the interpreting profession.	Prerequisites: None.	LEC 3.0 3.0 3.0



ASL110	Fingerspelling	Introduction to fingerspelling techniques. Focus on methods, theory, and applications on receptive and expressive skills including manual alphabet production and numbers. In addition, skill development in speed, dexterity, clarity, and lexicalized fingerspelling, numeric incorporation, prefixes, suffixes, and polysyllabic words.	Prerequisites: A grade of C or better in ASL101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ASL200	Issues and Resources	Implications of laws pertaining to educational choices and rights of deaf, deaf-blind, and hard of hearing individuals. Local, state, and national organizations, activities, and agencies affecting the deaf community.	Prerequisites: A grade of C or better in ASL102 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ASL201	American Sign Language III	Linguistics of American Sign Language (A.S.L.) including non-manual behaviors and signing English idioms with conceptual accuracy. Emphasis on practical application of A.S.L. skills, expanded vocabulary, and cross-cultural communication.	Prerequisites: A grade of C or better in ASL102 or permission of Department or Division. (ENG101 or ENG107) and (CRE101 or equivalent as indicated by assessment) suggested but not required. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
ASL202	American Sign Language IV	Advanced American Sign Language skills including continued vocabulary. Emphasis on conversational techniques in a cross-cultural framework. Continued work on conceptual accurate signing of English idioms and words with multiple meanings.	Prerequisites: A grade of C or better in ASL201 or permission of Department or Division. (ENG101 or ENG107), ASL200, and (CRE101 or equivalent as indicated by assessment) suggested but not required. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
ASL203	American Sign Language V	Advanced study of vocabulary, classifiers, use of space, and grammatical features of American Sign Language (ASL). Includes evaluation of changes that occur in ASL as a living language. Advanced use of ASL in demonstrations, reports, and presentations	Prerequisites: A grade of C or better in ASL202. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0

ASL204	Comparative Linguistics: ASL/English	A variety of topics about linguistics of American Sign Language (ASL) and English including phonology, morphology, lexicon, syntax, discourse, and language acquisition. Aspects of using sign language and how visual languages differ and are similar to spoken language.	Prerequisites: A grade of C or better in ASL202. Corequisites: ASL203. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ASL212	Deaf Culture	Linguistic, social, educational, and political issues in deaf culture. Values and group identity issues as related to heritage and literature. Special emphasis on the cultural and philosophical attitudes shared with other minority groups.	Prerequisites: A grade of C or better in ASL202 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ASL296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify), or permission of Instructor. Corequisites: Concurrent in at least one class related to student's major or career interest, or permission of Instructor.	LAB 1.0 5.0 0.0
ASL296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify), or permission of Instructor. Corequisites: Concurrent in at least one class related to student's major or career interest, or permission of Instructor.	LAB 2.0 10.0 0.0

ASL296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify), or permission of Instructor. Corequisites: Concurrent in at least one class related to student's major or career interest, or permission of Instructor.	LAB 3.0 15.0 0.0
ASL296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify), or permission of Instructor. Corequisites: Concurrent in at least one class related to student's major or career interest, or permission of Instructor.	LAB 4.0 20.0 0.0
ASL298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

ASL298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ASL298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ASM104	Bones, Stones, and Human Evolution	Study of human evolution and variation; including fossil hominids and their tools, primate anatomy and behavior, human genetics, and the environment and human biology.	Prerequisites: None.	L+L 4.0 5.0 5.0
ASM265	Laboratory Methods in Archaeology	Techniques of artifact. Basic archaeological research techniques; methods of report writing.	Prerequisites: None.	L+L 4.0 4.0 4.0

ASM275	Forensic Anthropology	Survey of the role of forensic anthropologists, from the crime scene to the courtroom. Course focuses on how skeletal analysis can aid in medicolegal investigations, especially by identifying aspects of the life history of unknown individuals and by reconstructing events that took place at crime scenes. Covers both the legal aspects of forensic practice and the underlying biological basis for evidence obtained from skeletal remains. Examines applications of forensic anthropology in mass disasters, human rights investigations, and the deciphering of historic cases. Lab activities designed to illustrate techniques and principles central to the discipline.	Prerequisites: None.	L+L 4.0 5.0 5.0
ASM282AA	Service-Learning Experience in Anthropology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
ASM282AB	Service-Learning Experience in Anthropology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
ASM282AC	Service-Learning Experience in Anthropology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
ASM298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

ASM298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ASM298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AST101	Survey of Astronomy	Survey of astronomy for the nontechnical student. The history, content, and evolution of the solar system and the universe in general. Astronomical principles and instrumentation. The planets, moons, sun, comets, stars and star formation, galaxies, and cosmology.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
AST102	Survey of Astronomy Laboratory	Astronomical observations and exercises designed to familiarize students with the sky, telescopes, and methods used in astronomy.	Prerequisites: A grade of C or better in AST101 and permission of Instructor or Department or Division.	LAB 1.0 3.0 3.0
AST106	Life in the Universe	Introduction to the search for life in the universe for the non-science major. Earth's location in space and time, nature of life, light and the spectrum, origin and history of the universe, origin of life on Earth and the possibility of life on other planets.	Prerequisites: A grade of C or better in MAT090 or MAT091 or MAT092 or completion of higher level mathematics course, or satisfactory score on placement exam.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

AST107	Life in the Universe Laboratory	Astronomy, Biology, and Planetary Science laboratory.	Prerequisites: A grade of C or better in AST/GLG106 and permission of Instructor or Department or Division.	LAB 1.0 3.0 3.0
AST111	Introduction to Solar System Astronomy	Introduction to astronomy for the non-science major. The scientific method, properties of light, astronomical instruments, our Solar System and solar systems around other stars. Includes hands-on astronomical observations and laboratory exercises.	Prerequisites: A grade of C or better in MAT092 or higher, or satisfactory score on district placement exam.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
AST112	Introduction to Stars, Galaxies, and Cosmology	Introduction to astronomy for the non-science major. Structure and evolution of stars; supernovae, black holes, and quasars; nebulae; star clusters; galaxies; cosmology, including the birth and death of the universe.	Prerequisites: A grade of C or better in MAT092 or higher, or satisfactory score on district placement exam.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
AST113	Introduction to Solar System Astronomy Laboratory	Hands-on astronomical observations and exercises to supplement AST111.	Prerequisites: A grade of C or better in AST111 and permission of Instructor or Department or Division.	LAB 1.0 3.0 3.0
AST114	Introduction to Stars, Galaxies, and Cosmology Laboratory	Hands-on astronomical observations and exercises to supplement AST112.	Prerequisites: A grade of C or better in AST112 and permission of Instructor or Department or Division.	LAB 1.0 3.0 3.0
AST282AA	Service-Learning Experience in Astronomy	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Permission of Instructor.	LAB 1.0 1.0 0.0
AST282AB	Service-Learning Experience in Astronomy	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
AST282AC	Service-Learning Experience in Astronomy	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Permission of Instructor.	LAB 3.0 3.0 0.0

AST285	Introduction to Astrodynamics	Introduction to celestial mechanics and the dynamics of spacecraft navigation. Introduction to rocket propulsion and spacecraft design. Orbital and interplanetary celestial mechanics and maneuvers. Astrophysics and characteristics of the space environment. Lab is project-based, utilizing a real-time spacecraft simulation environment.	Prerequisites: A grade of C or better in ENG101 and (PHY115 or PHY121).	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
AST294	Special Topics in Astronomy	Conceptual, experimental, and computational aspects of a special topic in astronomy.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
AST294AA	Special Topics in Astronomy	Conceptual, experimental, and computational aspects of a special topic in astronomy.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
AST294AB	Special Topics in Astronomy	Conceptual, experimental, and computational aspects of a special topic in astronomy.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
AST294AC	Special Topics in Astronomy	Conceptual, experimental, and computational aspects of a special topic in astronomy.	Prerequisites: Permission of Department or Division.	LEC 0.5 0.5 0.5
AST298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



AST298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
AST298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ATC130	Air Traffic Control	Entry-level course in Air Traffic Management, provides the student with a fundamental knowledge of the United States air traffic control system.	Prerequisites: None.	LEC 3.0 3.0 3.0
ATC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

ATC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ATC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ATP100	Introduction to Manufacturing and Programmable Logic Controllers	Explores the origin and basic operation of programmable logic controllers (PLC) in manufacturing processes. Laboratory exercises include ladder logic programming, installation, adjustment, and testing of digital and analog sensors, signal conditioners, and basic troubleshooting concepts.	Prerequisites: None.	L+L 3.0 6.0 6.0
ATP101	Introduction to Automated Systems and Robotics	An introduction to automation, distribution systems, Automated Storage and Retrieval Systems (ASRS), and the role of the manufacturing technician. Includes general manufacturing techniques, industry standards, and statistical process control.	Prerequisites: None.	LEC 2.0 2.0 2.0

ATP102	Industrial Automation Fundamentals	Introduction to the fundamentals of industrial automation systems. Topics include the theory, construction, and integration of various components used in industrial automation systems such as sensors, conveyors, electrical components, fluid power components, programmable logic controllers, and industrial robots.	Prerequisites: A grade of C or better in MIT120 or MAT090 or MAT091 or MAT092 or completion of higher level math course, or satisfactory score on math placement exam, or permission of Department or Division.	LEC 3.0 3.0 3.0
ATP105	Engineering Documentation	Analysis and interpretation of engineering documentation, common to manufacturing processes.	Prerequisites: None.	LEC 2.0 2.0 2.0
ATP106	Industrial Electrical Systems	Safety for electrical power and control systems, DC & AC circuit analysis, DC power supplies, switches and proximity sensors, inductors and capacitors, electrical and engineering documentation & schematics, digital multimeter & oscilloscope operation, solid state relays, and industrial control transformers.	Prerequisites: None.	L+L 3.0 6.0 6.0
ATP110	Basic Manufacturing Processes	Introduction to the traditional manufacturing processes used to cut, shape, process, and assemble materials into the tools and equipment used to support industry and consumer needs. Processes explored include machining, casting, welding, heat treating, coatings, and assembly.	Prerequisites: None.	L+L 2.0 3.0 3.0
ATP111	Mechanical Systems and Maintenance	Examination of mechanical drive systems. Includes fundamentals of direct drives, belt and pulley drives, chain drives and gear drives. Explores calculating and measuring quantities such as power, speed, torque, speed and torque reduction/amplification, and backlash. Also includes hands-on experience assembling and aligning components, testing and troubleshooting systems.	Prerequisites: None.	L+L 3.0 6.0 6.0

ATP115	Fluid Power	Fundamental industrial fluid power concepts including hydraulic and pneumatic installation, maintenance, and adjustments for the control of automated manufacturing systems.	Prerequisites: None.	L+L 3.0 6.0 6.0
ATP120	Industrial Skills Verification - Employability Skills	This course is an accelerated industrial certification for employability skills, including certification of career readiness standards as measured by the National Career Readiness Certificate (NCRC).	Prerequisites: Permission of Instructor or Program Director.	LEC 1.0 1.0 1.0
ATP122	Basic Soldering Certification	This course is an accelerated industrial certification for basic J-STD soldering, including certification by IPC (Association for Connecting Electronics Industries).	Prerequisites: Permission of Instructor or Program Director.	L+L 1.0 1.0 1.0
ATP125	Electrical Wire Harness Assembly Skills Verification	This course is an accelerated industrial certification for basic J-STD soldering (including certification by IPO), certification of career readiness standards as measured by the National Career Readiness Certificate (NCRC), and the fabrication, wiring, inspection and repair techniques of aircraft electrical wire harness assemblies.	Prerequisites: Permission of Instructor or Program Director.	L+L 4.0 4.0 4.0
ATP130	DC Circuit Analysis	Direct current (DC) electric circuits. Ohm's law, Kirchoff's laws, series, parallel and series-parallel circuits, network theorems, fundamentals of magnetism in electric circuits.	Prerequisites: None.	L+L 2.0 2.0 2.0
ATP135	AC Circuit Analysis	Alternating Current (AC) circuits containing resistance and reactance. Detailed coverage of AC circuit parameters, including theorems, impedance matching, and resonance.	Prerequisites: A grade of C or better in ATP130 or ELE100 or approval of Instructor.	L+L 2.0 3.0 3.0
ATP150	Fluid Power 1 - Hydraulics, Pneumatics, and Vacuum Concepts	Fundamental fluid power and vacuum for industry. Pneumatic, hydraulic, and vacuum system technologies with emphasis on assembly, integration, and measurement.	Prerequisites: None.	L+L 2.0 3.0 3.0

ATP160	Programmable Logic Controllers 1 - Introduction to Ladder Logic	Introductory lecture and laboratory course explores the origin and basic operation of Programmable Logic Controllers (PLC) with laboratory exercises including wiring of hardware, ladder logic programming and basic troubleshooting concepts.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ATP135 or ELC119 or permission of Program Director.	LEC 3.0 2.0 2.0 LAB 0.0 4.0 4.0
ATP175	Introduction to Motors and Motor Controls	Introduction to direct current and alternating current (AC) motors, types of direct current (DC) and alternation motors.	Prerequisites: A grade of C or better in (ATP130 and ATP135) or ELE111.	L+L 2.0 3.0 3.0
ATP180	Programmable Logic Controllers 2 - Human-Machine Interfaces and Function Block Programming	Advanced lecture and laboratory course builds upon the foundations covered in introductory course, covering development and documentation of advanced ladder logic and function block programming, Programmable Logic Controller (PLC) control of variable frequency devices, and the installation and programming of Human Machine Interfaces (HMI).	Prerequisites: A grade of C or better in ATP160 or permission of Program Director.	LEC 4.0 2.0 2.0 LAB 0.0 5.0 5.0
ATP190	Industrial Robotics	Introduction to industrial robotics covering topics such as safety, operation, control technology, and programming.	Prerequisites: A grade of C or better in GTC108 or higher level math course.	LEC 3.0 4.0 3.7
ATP200	Sensors and Measurement	Applications of sensors and measurement including correct sizing and application	Prerequisites: A grade of C or better in ATP130 and ATP135, or permission of Instructor.	L+L 2.0 3.0 3.0
ATP201	Programmable Logic Controller (PLC) Systems	Advanced lecture and laboratory course builds upon the foundations covered in introductory course, including development and documentation of advanced ladder logic and function block programming, Programmable Logic Controller (PLC) control of variable frequency devices, PLC Networks and the installation and programming of Human Machine Interfaces (HMI).	Prerequisites: A grade of C or better in (ATP100 and ATP106) or permission of Instructor.	L+L 3.0 6.0 6.0

ATP205	Electric Motors and Controls	Examination of electrical motor control, power, and protection systems. Includes fundamentals of single and three-phase power, power, control and protection circuits. Also includes variable frequency drive (VFD), silicon controlled rectifier (SCR) control, and programmable logic controller (PLC).	Prerequisites: A grade of C or better in (ATP100 and ATP106) or permission of Instructor.	L+L 3.0 6.0 6.0
ATP210	Process Control	Introduction to instrumentation and control systems for wet type (continuous product) and dry type (discrete product) production systems. Includes process control concepts, instrumentation tag information, piping and instrumentation diagrams, level and flow sensing devices, Proportional-Integral-Derivative (PID) controllers, Programmable Logic Controllers (PLC), and final control elements.	Prerequisites: A grade of C or better in (ATP100 and ATP106) or permission of Instructor.	L+L 3.0 6.0 6.0
ATP215	Automation System Integration	Capstone course regarding the implementation of the planning, construction, adjustment, and testing of an industrial control system needed for the development of a functional automated system.	Prerequisites: A grade of C or better in (ATP201 and ATP205 and ATP210) or permission of Instructor.	L+L 3.0 6.0 6.0
ATP222	Servo Systems	Introduction to the industrial applications of Servo Systems specifically in automated systems. Instruction includes concepts, applications, and maintenance of servos and the control systems for servo installations.	Prerequisites: A grade of C or better in (ATP160 and ATP175) or permission of Instructor.	L+L 2.0 3.0 3.0

ATP235	Automation Using CNC Programming	Computer Numerical Control (CNC) Programming of Word Address Language (G&M Code) for CNC Machine tools. Two and three-axis CNC Programming for CNC controlled machines. CNC tool-path program structure and CNC machine tool-path simulation using CNC tool path simulator. Tooling, Speeds, Feeds and material removal as related to CNC machine tools and CNC controlled machines.	Prerequisites: A grade of C or better in ATP110 or permission of Instructor.	L+L 2.0 3.0 3.0
ATP245	Introduction to Solid Modeling - Solidworks 1	Concepts of engineering documentation to solid model mechanical design. Feature-based parametric modeling techniques for technical communication. Creation of solid models and technical documents of mechanical parts and assemblies per the American Society of Mechanical Engineers (ASME) Y14 standards.	Prerequisites: A grade of C or better in ATP105 or permission of Instructor.	L+L 3.0 4.0 4.0
ATP251	Fluid Power 2 - Automation Applications	Application of the basic Fluid Power principles of Hydraulics, Pneumatics, and Vacuum to the control of automated systems used to produce products through the application of discrete and hybrid electromechanical systems.	Prerequisites: A grade of C or better in ATP150 or permission of Instructor.	L+L 2.0 3.0 3.0
ATP260	Industrial Automation System Integration 1	Overview of the evaluation and planning activities needed to establish a functioning automated manufacturing application.	Prerequisites: A grade of C or better in ATP175 and ATP180, or permission of Instructor.	L+L 3.0 3.0 3.0
ATP265	Industrial Automation System Integration 2	A coordinating course regarding the implementation of the planning, construction, and industrial control systems needed for the development of a functional automated system.	Prerequisites: A grade of C or better in ATP260 or permission of Instructor.	L+L 3.0 3.0 3.0
ATP290	Lean and Six Sigma Techniques	Survey and application course regarding the utilization of Lean and six sigma techniques to enhance manufacturing processes.	Prerequisites: None.	LEC 3.0 3.0 3.0

ATP296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 1.0 5.0 0.0
ATP296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 2.0 10.0 0.0
ATP296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 3.0 15.0 0.0



ATP296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 4.0 20.0 0.0
ATP298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ATP298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ATP298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
AUT097	General Automotive Maintenance	A study of automotive systems operation and maintenance for the consumer. Purchasing service for cars and performing minor maintenance	Prerequisites: None.	LEC 3.0 3.0 3.0
AUT101	Internal Combustion Engines Theory	Study of construction and operating principles of internal combustion engines and related lubrication, cooling, fuel, and electrical systems	Prerequisites: None.	LEC 3.0 3.0 3.0
AUT101AA	Internal Combustion Engines Theory	Study of construction and operating principles of internal combustion engines and related lubrication, cooling, fuel, and electrical systems	Prerequisites: None.	L+L 3.0 4.0 4.0
AUT103AA	Automotive Electrical Systems	Basic principles and fundamentals of automotive electricity and electrical systems. Training in diagnosis, service and reconditioning procedures of automotive starting, charging, ignition, and electrical circuits and components	Prerequisites: None.	L+L 6.0 10.0 10.0

AUT103AB	Automotive and Electrical/Electronic Systems I	Designed for beginning automotive students. The principle of electricity; the mathematical computations involved with Ohm's Law; the use of meters; electrical schematics; the theory of electrical components as they relate to automobiles; the diagnosis, testing, service and repair of batteries, starting systems and charging systems, lighting systems and instrumentation	Prerequisites: None.	L+L 4.0 7.0 7.0
AUT103BD	Ignition Systems	Diagnosis, service, and reconditioning procedures for automotive ignition systems	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
AUT103DA	Basic Automotive Electrical Theory	Covers introductory level automotive electrical theory. This includes shop safety and procedures, Circuits, Ohm's Law, use of meters, oscilloscopes, and other basic test equipment, as well as diagnosis of problems in and caused by electrical circuits. Repair of these problems also covered	Prerequisites: None.	L+L 1.1 2.0 2.0
AUT103DB	Automotive Batteries	Study of automotive batteries. Diagnosis, testing, service, and repair of batteries and related circuits covered	Prerequisites: A grade of C or better in AUT103DA or permission of Instructor.	L+L 0.6 1.0 1.0
AUT103DC	Automotive Charging Systems	The diagnosis, testing, service, and repair of charging systems and related components	Prerequisites: A grade of C or better in AUT103DA or permission of Instructor.	L+L 0.9 1.5 1.5
AUT103DD	Automotive Starting Systems	Covers the starting motor systems used on modern automotive vehicles including light duty trucks. Diagnosis, testing, service, and repair of starting systems and related components covered.	Prerequisites: A grade of C or better in AUT103DA or permission of Instructor.	L+L 0.6 1.12 1.12
AUT103DE	Automotive Lighting, Indicator, and Warning Circuits	Covers the operation of, diagnosis and repair of common automotive lighting, instrumentation, and warning device circuits used on the automobile.	Prerequisites: A grade of C or better in AUT103DA or permission of Instructor.	L+L 0.8 1.37 1.37

AUT104AA	Automotive Fuel Systems	Theory and operation of fuel injection, engine control management, turbo charging and fuel systems, training in diagnosis, service and reconditioning procedures	Prerequisites: A grade of C or better in AUT103AA or AUT103AB or permission of Instructor.	L+L 3.0 5.0 5.0
AUT105AA	Engine Performance and Diagnosis	The theory and fundamentals of automotive engine management troubleshooting and oscilloscope testing as it pertains to diagnosis and tune-up of the modern day automobile. Emphasis on interpretation of oscilloscope patterns and Scantool Data as they relate to engine performance.	Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.	L+L 3.0 5.0 5.0
AUT106AA	Engine Overhaul and Reconditioning	Diagnostic and service skills essential to service and repair automotive internal combustion engines. Includes valve guide, seat reconditioning, cylinder block, piston, rod and crankshaft service	Prerequisites: None.	L+L 4.0 8.0 8.0
AUT106AC	Engine Overhaul and Reconditioning: Heads and Valves	Diagnostic and service skills essential to service and repair of the cylinder head and valve train of contemporary automotive engines. Includes valve, guide, and seat reconditioning and service. Does not include block and crankshaft service	Prerequisites: A grade of C or better in AUT103AA or permission of Instructor.	L+L 3.0 5.0 5.0
AUT106AD	Engine Overhaul and Reconditioning Block and Crankshaft	Diagnostic and service skills related to cylinder block, piston, rod and crankshaft service. Includes honing, boring and crankshaft reconditioning as well as piston and ring service. Does not include cylinder head and valve work.	Prerequisites: None.	L+L 3.0 5.0 5.0
AUT107AA	Automotive Air Conditioning	The theory and principles of refrigeration and air conditioning. Training in diagnosis, servicing, and reconditioning procedures of automotive air conditioning systems	Prerequisites: None.	L+L 3.0 5.0 5.0
AUT107AC	Automotive Air Conditioning	The theory and principles of refrigeration and air conditioning. Training in diagnosis, servicing, and reconditioning procedures of automotive air conditioning systems	Prerequisites: None.	L+L 3.0 6.0 6.0

AUT107AD	Automotive Air Conditioning	The theory and principles of refrigeration and air conditioning. Training in diagnosis, servicing, and reconditioning procedures of automotive air conditioning systems including electronic system controls.	Prerequisites: A grade of C or better in AUT103AA.	L+L 4.0 7.0 7.0
AUT108AA	Front-End Suspension, Steering, and Alignment	The fundamentals and principles of suspension and steering systems. Diagnosis, service, and reconditioning procedures. Laboratory emphasis on front-end alignment and wheel balancing	Prerequisites: A grade of C or better in AUT103AA or permission of Instructor.	L+L 6.0 10.0 10.0
AUT108AB	Front-End Suspension, Steering, and Alignment	The fundamentals and principles of suspension and steering systems. Diagnosis, service, and reconditioning procedures. Laboratory emphasis on front-end service and alignment	Prerequisites: None.	L+L 4.0 7.0 7.0
AUT109AA	Automotive Brake Systems	The fundamentals and principles of hydraulics and automotive braking systems. Diagnosis, service, and reconditioning procedures of automotive braking systems	Prerequisites: None.	L+L 3.0 5.0 5.0
AUT109AC	Automotive Brake Systems	Designed for beginning automotive students. Fundamentals of drum, disc, and ABS brakes. Includes training in diagnosis, testing, service, and repair	Prerequisites: None.	L+L 4.0 7.0 7.0
AUT110AA	Automotive Transmissions and Power Trains	The fundamentals and principles of transmissions, clutches, planetary gearsets, fluid coupling, drive lines, and differentials. Diagnosis, service, and reconditioning procedures. Includes minor diagnosis and service procedures for automatic transmissions	Prerequisites: None.	L+L 3.0 5.0 5.0
AUT110AC	Automotive Power Trains	Designed for beginning automotive students. Operation, diagnosis, service, and repair of the automotive power train. Includes clutches, torque converters, standard and automatic transmissions and transaxles, front and rear drive axles, drive shafts, differentials and transfer case	Prerequisites: None.	L+L 4.0 7.0 7.0

AUT114	Compressed Natural Gas Cylinder Inspection	Identification of the four types of gas cylinders. Condition of the cylinder(s), safety issues associated with gas tanks, and inspection procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
AUT115AA	Diesel Engine Fuel Systems	Operation, diagnosis, maintenance, and testing procedures of fuel injection pumps, injectors, and related fuel system components	Prerequisites: None.	L+L 3.0 5.0 5.0
AUT123	Automatic Transmissions	Theory of operation and servicing procedures for current automatic transmissions.	Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.	LEC 6.0 4.0 4.0 LAB 0.0 6.0 6.0
AUT123AA	Automatic Transmissions	Theory of operation and servicing procedures for current domestic automatic transmissions; includes diagnostics and testing of mechanical, electrical, and hydraulic components	Prerequisites: None.	L+L 4.0 8.0 8.0
AUT130	Automotive Quick Service	Use of standard service publications; performance of commonly used service operations following published service procedures; emphasis on good attitude development and safety habits about automotive service.	Prerequisites: None.	L+L 4.0 7.0 7.0
AUT203	Electrical Accessories	Theory and principles of wiring diagrams, accessories circuits, turn signals, and warning systems. Circuit trouble-shooting and service of gauges, indicators, power windows and seats, deck latches, and windshield wipers. Computerized electronic devices.	Prerequisites: A grade of C or better in AUT103AA or permission of Instructor.	L+L 3.0 5.0 5.0
AUT210	Automotive Emission Systems	Automotive emissions control systems and methods of emissions measurement. Diagnostic practices as suggested by the manufacturers and the related service of emissions control devices	Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.	LEC 3.0 3.0 3.0

AUT210AA	Automotive Emission Systems	Automotive emissions control systems and methods of emissions measurement. Diagnostic practices as suggested by the manufacturers and the related service of emissions control devices	Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.	L+L 3.0 5.0 5.0
AUT215AA	Automotive and Electrical/Electronic Systems II	Electrical accessory circuits including horns, wipers, defoggers, automatic door locks, power mirrors, power windows and power seats. Focuses on introduction to body computers, advanced lighting circuits and instrumentation, and chassis electronic control systems. Includes training in diagnosis, testing, service, and repair.	Prerequisites: A grade of C or better in AUT103AA or AUT103AB or permission of Instructor.	L+L 4.0 7.0 7.0
AUT233	Computerized Engine Control Systems	Presents the reasons for developing and using computerized engine control systems. Explores system operation, examining each component. Emphasizes diagnosis and repair of system faults	Prerequisites: A grade of C or better in AUT103AB and AUT104AA or permission of Instructor.	L+L 3.0 5.0 5.0
AUT240	Hybrid Vehicle Overview	Automotive hybrid vehicle design and operation. Safety practices as suggested by manufacturers for servicing hybrid vehicles.	Prerequisites: A grade of C or better in AUT130.	L+L 2.0 3.0 3.0
AUT282AA	Service-Learning Experience in Automotive	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
AUT282AB	Service-Learning Experience in Automotive	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
AUT282AC	Service-Learning Experience in Automotive	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

AVT250	Navigation Systems: Advanced	Theory of operation, interfacing, and troubleshooting of automatic directional finder, very high frequency range, instrument landing, microwave landing, air traffic control, traffic alert, and collision avoidance, distance measurement equipment, radio altimeter, altitude alert, and ground proximity warning systems.	Airframe and Powerplant (A&P) license, or permission of Department or Division.	L+L 6.0 8.0 8.0
AVT260	Navigation Systems: Long Range	Theory of operation, interfacing, and troubleshooting of long range navigational, weather radar, and airborne data integrated, weight and balance computations, and flight control systems.	Prerequisites: Airframe and Powerplant (A&P) license and (a grade of C or better in AVT250 or permission of Department or Division).	L+L 6.0 8.0 8.0
AVT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
AVT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0



AVT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
BAW112	Hair Essentials	Focus on the competencies of the Cosmetologist and the Hair Stylist Certificate Programs and the Arizona State Board of Cosmetology as an introduction to the basic theory and procedures in Cosmetology Hair Essentials.	Prerequisites: None.	L+L 7.0 17.0 17.0
BAW114	Student Salon I	Introduction to Cosmetology Student Salon operations and client services in the Cosmetology Clinic. Focus on application of skills learned in the classroom on live and mock clients.	Prerequisites: None.	L+L 4.0 8.0 8.0
BAW116	Student Salon II	Continuation of student salon with a focus on real life scenarios to serve a client and/or become a future business owner in the beauty industry.	Prerequisites: A grade of C or better in BAW114.	L+L 4.0 8.0 8.0
BAW118	Hair Stylist State Licensure	Preparation for the written and practical examinations for Arizona State Board of Cosmetology licensure as related to hairstyling. Focus on Arizona State testing procedures for the written and practical examinations, as well as applicable Arizona State laws for a Hairstylist. Final salon business practices and services.	Prerequisites: None.	L+L 4.0 8.0 8.0
BAW119	Nail Essentials	Introduction to nail services in the beauty industry. Focus on knowledge and skills of providing nail services on actual clients in a salon setting.	Prerequisites: None.	L+L 4.0 8.0 8.0

BAW212	Skin Essentials	Introduction to skin services in the beauty industry. Focus on knowledge and skills of providing skin services on actual clients in a salon setting.	Prerequisites: None.	L+L 4.0 8.0 8.0
BAW214	Student Salon III	Focus on application of cosmetology skills learned in the live salon setting to perform services with limited instructor assistance. Industry readiness and preparation to perform services in the chosen field of expertise after licensure with Arizona State Board of Cosmetology.	Prerequisites: A grade of C or better in BAW116.	L+L 4.0 8.0 8.0
BAW218	Cosmetology State Licensure	Preparation for the written and practical examinations for Arizona State Board of Cosmetology licensure. Focus on Arizona State testing procedures for the written and practical examinations, as well as Arizona State laws for a cosmetologist. Final salon business practices and services.	Prerequisites: None.	L+L 4.0 8.0 8.0
BAW298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

BAW298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
BAW298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
BHS100	Behavioral Health Seminar	Special topics in behavioral health services with an emphasis on current issues	Prerequisites: None.	LEC 1.0 1.0 1.0
BHS105	Introduction to Human Relations	Introduction to the field of Behavioral Health Professionals including exposure to basic counseling skills	Prerequisites: None.	LEC 2.0 2.0 2.0
BHS150	Introduction to Behavioral Health and Social Services	Survey of the behavioral health and social services professions, including scope of practice and training requirements. Exploration of employment opportunities in the field and self-assessment/academic planning for a career in mental health. Overview of mental health disorders and first responder skills in a mental health crisis situation.	Prerequisites: None.	LEC 3.0 3.0 3.0

BHS152	Communication Skills in Counseling II	Application of communication skills important in establishing and maintaining effective helping relationships. Emphasis on rapport building, effective listening skills, appropriate feedback and the helping process.	Prerequisites: A grade of C or better in BHS165.	LEC 3.0 3.0 3.0
BHS155	Professional Resiliency Against Traumatic Stress, Burnout and Compassion Fatigue Prevention	Introduction to human resilience against burnout, traumatic stress, and compassion fatigue for social services and mental health professionals, healthcare providers, emergency first responders, and other relationship-intense occupations. Causes, symptoms, and effects of traumatic stress, burnout compassion fatigue and other work-related stress. Focus on enhancing quality of life and improving a healthy lifestyle by incorporating evidenced-based practices in biobehavioral self-regulation, mindfulness, cognitive restructuring, positive psychology, peer support, and self-care, including nutrition, exercise, and sleep. Techniques that function as preventative medicine to help mitigate the potential harmful effects of highly stressful careers.	Prerequisites: None.	LEC 1.0 1.0 1.0
BHS157	Supervised Practice II	Supervised practical experience as a paraprofessional in a social service agency. Assignment as an assistant to a practicing behavior health practitioner.	Prerequisites: A grade of C or better in BHS190 and permission of Department or Division.	L+L 3.0 15.0 0.0

BHS160	Ethical, Legal and Professional Issues in Behavioral Health and Social Service	Explores relevant ethical, legal, and professional issues inherent in the behavioral health and social services field, including expectations of and limitations on providers. Key areas of inquiry include boundaries and dual relationships, mandated reporting, confidentiality, scope of practice, beneficence and non-maleficence, rights and responsibilities, professional relationships, and credentialing/regulating agencies.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS165	Applied Therapeutic Communication Skills	Theory and practice of communication skills to establish and maintain effective helping relationships and enhance the therapeutic alliance. Emphasis on verbal communication, nonverbal communication, paraverbal communication, rapport building, empathetic and active listening skills, resolving interpersonal conflicts, appropriate feedback, and developing and maintaining personal and professional relationships.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS168	Hospice Volunteer Training	Exploration of hospice care and related medical, social, emotional and spiritual concepts for the helping professional working with patients and their families	Prerequisites: None.	LEC 2.0 2.0 2.0
BHS170	Case Management and Clinical Documentation	Overview and application of the principles, practices, and function of case management in human services. Case management service delivery and coordination for clients with psychological, developmental, and psychiatric and comorbid medical conditions. Documentation techniques necessary to maintain clinical records in a variety of behavioral healthcare settings.	Prerequisites: None.	LEC 3.0 3.0 3.0

BHS175	Introduction to Trauma-Informed Care and Trauma-Focused Caregiving	Comprehensive overview of various types of trauma, neurobiological effects of traumatic stress, and ethics associated in working with a trauma survivor. Concepts and skills needed to become a fully functioning trauma-informed caregiver professional in the mental health and primary care setting.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS178	Peer Training for Behavioral Health Paraprofessionals	Role exploration and expectations of the behavioral health paraprofessional. Confidentiality, communication, attending skills and developing rapport with persons with psychiatric illnesses. Workplace responsibilities, ethics, and boundaries. Mental health recovery, psychosocial rehabilitation and best practices in the treatment of psychiatric disorders. Client management and interventions to include crises intervention, coordination of care, and psychopharmacology, and clinical documentation	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS180	Child, Family, and Adult Advocacy	The role of advocacy in relation to multiple systems affecting children, families, and adults. Emphasis on identifying appropriate supports, community resources, and "wrap-around" services to help foster healthy family and child development, adult recovery, and social welfare.	Prerequisites: None.	LEC 3.0 3.0 3.0

BHS185	Cultural Competence in Behavioral Health	Exploration of cultural diversity and its potential impact on behaviors, emotions, cognitions and perceptions, relationships, and values. Intercultural communication skills through the examination of cultural and racial diversity, sexual and gender identity, social justice, and religious and spiritual diversity. Consideration of its implications for the therapeutic process and the importance of self-awareness and effective communication skills for professionals in the behavioral health and social sciences.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS190	Professional Portfolio: Supervised Practice In Behavioral Health and Social Services	Firsthand work experience in mental health, social service or a related behavioral healthcare provider setting. 80 hours of designated volunteer or paid work.	Prerequisites: A grade of C or better in BHS150, BHS155, and BHS160, and permission of Department or Division.	L+L 3.0 15.0 0
BHS205	Therapeutic Models and Interventions in Individual Therapy	Introduction to the major evidence-based therapeutic models and interventions in social and behavioral sciences. Defines the key concepts, techniques and procedures of each theoretical model.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS210	Addictions, Substance Use Disorders, and Relapse Prevention	An introduction to the historical and current developments in the field of addictions, as well as sociological, psychological and physiological aspects of addictive behaviors and substance abuse. Introduces contemporary treatment methods within addiction practice, including self-help groups, levels of care, symptom identification, and models of prevention and intervention.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS215	Therapeutic Models and Intervention in Group Therapy	Evaluate and demonstrate the methods and techniques for influencing change in group settings.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS216	Group Process	Evaluate and demonstrate the methods and techniques for influencing change in group settings.	Prerequisites: A grade of C or better in BHS151 or permission of Department or Division.	LEC 3.0 3.0 3.0

BHS220	Introduction to Integrated Behavioral Healthcare	Introduction to key concepts related to the provision of integrated health care services, as well as role of wellness and prevention in community health services. The course will introduce students to the theory and clinical practice of integrated behavioral health in primary care, as well as evidence-based approaches to promote wellness in individuals and communities.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS230	Crisis and Trauma Stabilization	Theoretical and applied foundation designed for behavioral health service providers working with people in crisis. Examines the phenomena and dynamics of crises and emergencies, as well as the related strategies/modalities.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS235	Emergency Mental Health Crisis Response and Recovery	Comprehensive study of natural and human-caused disasters and their effects on the trauma survivor. Introduction to basic emergency mental health interventions to help stabilize those experiencing crisis following critical incident disasters.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS251	Harm Reduction in Addiction, Substance Use, and Social Services	Introduction to harm reduction principles, policies, programs, and practices that aim to reduce the adverse health, social and economic consequences of the use of legal and illegal drugs. This course will introduce behavioral health and social service providers as well as paraprofessional counselors to the theory and practice of harm reduction strategies in addiction, social service, and community settings.	Prerequisites: None.	LEC 3.0 3.0 3.0



BHS255	Health and Wellness Coaching in Professional Resiliency	Comprehensive overview of the art, science, and role of coaching and teaching resiliency for the following issues: personal and work-related stress, burnout, traumatic stress, and compassion fatigue. Develop pedagogical techniques and practical application of evidence-based interventions in bibehavioral self-regulation, mindfulness, cognitive restructuring, positive psychology, peer support, and holistic self-care. Designed to develop skills as a health and wellness coach in professional resiliency for enhancing health and quality of life.	Prerequisites: A grade of C or better in BHS155.	LEC 3.0 3.0 3.0
BHS260	Case Report Writing	Terminology, technical forms and techniques of observation necessary to create and maintain records.	Prerequisites: A grade of C or better in BHS165 or permission of Department or Division.	LEC 1.0 1.0 1.0
BHS262	Behavioral Health Service Techniques for the Elderly	Specific counseling skills and appropriate intervention strategies for working with the elderly. Focus on the particular psychological, sociological and physical problems of this age group.	Prerequisites: A grade of C or better in ASD102, or BHS152, or permission of Department or Division.	LEC 3.0 3.0 3.0
BHS263	Applied Case Report Writing	Application of observation and documentation techniques necessary to maintain clinical records in a variety of community based behavioral health settings. Application of legal issues to case report writing	Prerequisites: A grade of C or better in BHS260.	LEC 1.0 1.0 1.0
BHS265	Violence and Abuse Matters	Exploration of topics relative to the development of helping professionals involved with perpetrators and individuals directly affected by traumatic or continuous physical or emotional violence and abuse	Prerequisites: None.	LEC 2.0 2.0 2.0
BHS266	Violence and Abuse Services	Techniques, strategies, and treatment modalities necessary for the helping professional working with the victims and perpetrators of violence and abuse.	Prerequisites: None.	LEC 3.0 3.0 3.0

BHS267	Introduction to Play Therapy	Exploration and application of therapeutic play techniques and strategies for the helping professional working with children.	Prerequisites: A grade of C or better in (BHS105 and BHS165) or permission of Department or Division.	LEC 3.0 3.0 3.0
BHS268	Grief And Bereavement Issues	Exploration of topics related to the development of helping professionals involved with loss, bereavement, and grief work	Prerequisites: None.	LEC 2.0 2.0 2.0
BHS269	Grief Support Techniques	Techniques, strategies, and treatment modalities necessary for the helping professional working with the bereaved and others affected by traumatic loss.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS270	Introduction to Dance and Movement Therapy	A lively course focused on basic techniques used in expressive arts and body-based therapies. The course incorporates Tools for integrating body, mind, and spirit in a creative dance and movement format	Prerequisites: A grade of C or better in PSY101 and BHS105.	LEC 3.0 3.0 3.0
BHS271	Developmental Disabilities Assistance Training	Introduction to the field of developmental disability assistance. Also includes common causes of developmental disabilities, treatments and other behavioral conditions that may affect such individuals.	Prerequisites: None.	LEC 30 3.0 3.0
BHS272	Child and Adolescent Mental Health and Interventions	Strategies for training and reinforcing positive interaction with children. Covers behavior management strategies and techniques to prevent behavioral problems, replace behaviors and manage consequences.	Prerequisites: None.	LEC 3.0 3.0 3.0
BHS275	Infant and Early Childhood Mental Health	Foundational knowledge of mental health during infancy and early childhood. Exploration of social-emotional development and relational influences on mental health. Emphasis on identifying early warning signs, making appropriate referrals, and employing a multidisciplinary child and family team approach to services.	Prerequisites: None.	LEC 3.0 3.0 3.0

BHS278	Recovery Coaching	Recovery based mental health treatment plans and processes. Recovery based concepts, barriers, principles, practices, and environments. Organizational support, expectations, and activities related to mental health issues and recovery in the work setting. Planning techniques, learning styles, participation methods, and problem behavior due to mental health issues in the workplace	Prerequisites: A grade of C or better in BHS105.	LEC 3.0 3.0 3.0
BHS281	Introduction to Art Therapy	Exploration of the process, dynamics and objectives of the therapeutic art experience. Emphasis on Art Therapy from both the psychological and artistic perspectives. Highlights topics in the history, theory and practice of Art Therapy	Prerequisites: A grade of C or better in BHS105 or permission of Department or Division.	LEC 3.0 3.0 3.0
BHS285	Facilitating Art Therapy Groups	Emphasis on facilitating art therapy groups in a variety of settings using visual art as a medium. Process, dynamics, and objectives of group work and the therapeutic art process.	Prerequisites: A grade of C or better in BHS216 and BHS281.	LEC 3.0 3.0 3.0
BHS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

BHS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
BHS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
BIO080AD	Basic Concepts of Environmental Biology	Corresponds to BIO105 Environmental Biology. Enrollment is recommended if student performance inadequate in BIO105	Prerequisites: None.	LEC 4.0 3.0 0.0 LAB 0.0 3.0 0.0
BIO080AE	Basic Concepts of Introductory Biology for Allied Health	Corresponds to BIO156 Introductory Biology for Allied Health. Enrollment is recommended if student performance is inadequate in BIO156.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO100	Biology Concepts	Introductory course covering basic principles and concepts of biology. Methods of scientific inquiry and behavior of matter and energy in biological systems are explored.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

BIO101	Introduction to Human Genetics for Non-Majors	Study of inheritance in humans, at the organismal, cellular and molecular levels. Includes exploration of gene expression, isolation and manipulation of DNA, Mendelian genetics, pedigree analysis, as well as chromosomal abnormalities and genetic diseases.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO102	Cells to Systems: An Introduction to Biology for Non-Majors	Study of living things. Builds from basic molecular components to structure and physiology of cells and organ systems of animals and plants.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO105	Environmental Biology	Fundamentals of ecology and their relevance to human impact on natural ecosystems. Field trips may be required at students` expense.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO106	Biotechnology and Society I	Introduction to biotechnology and its impact on society. Covers applications, limitations, benefits, risks, and legal and moral issues associated with biotechnology	Prerequisites: None.	LEC 3.0 3.0 3.0
BIO107	Introduction to Biotechnology	Introduction to biotechnology and its global impact on society. Covers applications, laboratory techniques, limitations and the international economic benefits, risks, and legal and moral issues associated with biotechnology	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO108	Plants and Society	A global study of plants in relation to humans; as a source of food, fiber, drugs, and other products; for aesthetic value, survival, and energy	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO109	Natural History of the Southwest	Study of the common plants and animals of the Southwest including their distribution, adaptation, behavior, and ecology. Introduction to basic field and laboratory techniques used in the study of natural history. Specific field problems presented dealing with plant and animal analysis and ecological interrelationships.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

BIO111	Microbes and Society	Examination of the science of microbes and the impact of microbes on human affairs. Topics include principles of microbial diversity, cell structure, growth and reproduction, global processes, disease, and prevention of disease.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO140	Wildlife Field Techniques	Introduces field techniques used in Wildlife or Conservation Biology; includes field research, and survey techniques for wildlife populations including mammals, fish, birds, reptiles and vegetation, habitat and range. Reviews job opportunities in the field. Includes assisting working biologists with research or management projects. Covers basic field skills including camping skills, four-wheel drive vehicles, hazards, working conditions in the field, and safe practices.	Prerequisites: A grade of C or better in BIO100 or BIO182, or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO145	Marine Biology	A survey of marine environments and their biotic communities with emphasis on the natural history of marine organisms	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO148	Coral Reef Ecology	Introduction to ecology of coral reefs. Emphasis on reef environments, corals, reef fishes, and human impacts on reefs	Prerequisites: None.	LEC 1.0 1.0 1.0
BIO149AF	Field Biology: Natural History of the Grand Canyon	Survey of plants and animals of the Grand Canyon emphasizing ecological relationships and adaptational biology. Human activities in and impact upon the Canyon's ecosystems from prehistoric times to present considered. Course consists of on-campus lectures and 7-day raft trip through inner gorge of the Grand Canyon	Prerequisites: None.	LAB 1.0 7.0 1.0
BIO149AH	Field Biology: Marine Biology in Mexico	Introduction to marine experiments, marine biology, and ecology. On-site field experience in Mexico. Emphasis on observation and study of marine organisms along the shore.	Prerequisites: Permission of Instructor.	L+L 1.0 1.34 1.34

BIO149AI	Biology: Tropical Biology/ Costa Rica	A 14-day study of different tropical life zones, including hot wet jungle, hot dry jungle, and cloud forest. Emphasis on unusual plant and animal interactions, tropical ecology, and adaptations. Topics include diversity, competition, epiphytes, parasites, pollinators, reproductive strategies, and zonation. Field sites located in national parks of Costa Rica. Living conditions not developed but comfortable. Daily hikes required.	Prerequisites: None.	LAB 2.0 14.0 2.0
BIO149AK	Field Biology: Ecological and Environmental Field Experience	Field expeditions in which ecological and environmental principles and concepts are observed and studied.	Prerequisites: None.	LAB 1.0 7.0 1.0
BIO149AL	Field Biology: Ecological and Environmental Field Experience	Field expeditions in which ecological and environmental principles and concepts are observed and studied.	Prerequisites: None.	LAB 2.0 14.0 2.0
BIO149AM	Field Biology: Ecological and Environmental Field Experience	Field expeditions in which ecological and environmental principles and concepts are observed and studied	Prerequisites: None.	LAB 3.0 21.0 1.0
BIO149AN	Field Biology: Ecological and Environmental Field Experience	Field expeditions in which ecological and environmental principles and concepts are observed and studied	Prerequisites: None.	LAB 4.0 28.0 1.0
BIO149AO	Field Biology: Ecological and Environmental Field Experience	Field expeditions in which ecological and environmental principles and concepts are observed and studied.	Prerequisites: None.	LAB 0.5 3.5 0.7
BIO149SV	Field Biology: Ecological and Environmental Field Experience	Field expeditions in which ecological and environmental principles and concepts are observed and studied.	Prerequisites: None.	L+L 1.0 1.34 1.34
BIO156	Introductory Biology for Allied Health	An introductory biology course for allied health majors with an emphasis on humans. Topics include fundamental concepts of cell biology, histology, microbiology, and genetics.	Prerequisites: A grade of C or better in RDG100 or RDG100LL or higher or eligibility for CRE101 as indicated by appropriate reading placement test score. One year of high school or one-semester of college level chemistry is strongly recommended.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

BIO156XT	Introductory Biology for Allied Health	An introductory biology course for allied health majors with an emphasis on humans. Topics include fundamental concepts of cell biology, histology, microbiology, and genetics.	Prerequisites: A grade of C or better in RDG100 or RDG100LL or higher or eligibility for CRE101. One year of high school or one-semester of college level chemistry is strongly recommended.	LEC 4.0 3.0 3.0 LAB 0.0 4.0 4.0
BIO160	Introduction to Human Anatomy and Physiology	Principles of scientific method. Structural organization, homeostasis and control mechanisms of the body. Specific chemistry concepts. Structure and function of the major systems of the body.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO162	Microbiology Concepts for Allied Health	Types of microorganisms. Principles of growth and reproduction for specific types of microorganisms. Chain of disease transmission and defense mechanisms. Use of compound microscope. Safe handling and culturing of specific microbes. Methods of sterilization and use of disinfectants and chemotherapeutic agents	Prerequisites: None.	L+L 2.0 3.0 3.0
BIO171	Introduction to Good Manufacturing Practices(GMP)-Regulated Manufacturing	Course is designed to provide individuals with an overview of Good Manufacturing Practices (GMP), their application in a variety of industries and the opportunities for in such fields.	Prerequisites: None.	LEC 3.0 3.0 3.0
BIO173	Basic Instrumentation and Lab Math	Introductory course covering basic equipment, measurements, and calculations used in biotechnology laboratories.	Prerequisites: None. BIO156 or BIO181 recommended.	LEC 1.0 1.0 1.0
BIO174	BioSafety	General laboratory safety, hazardous chemical use and disposal, biohazardous material use and disposal, biosafety procedures, and radiation safety.	Prerequisites: None.	LEC 1.0 1.0 1.0
BIO175	Research Methods in Biology	Fundamentals of planning and conducting biological experiments, including ones that simultaneously vary multiple experimental variables. Subsequent analysis, interpretation, and reporting of results.	Prerequisites: None. BIO156 or BIO181 recommended.	L+L 1.0 2.0 2.0



BIO181	General Biology (Majors) I	The study and principles of structure and function of organisms at the molecular and cellular levels. A detailed exploration of the chemistry of life, the cell, and genetics.	Prerequisites: A grade of C or better in RDG100 or RDG100LL or higher or eligibility for CRE101. One year of high school or one semester of college-level biology and chemistry is strongly recommended.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO181XT	General Biology (Majors) I	The study and principles of structure and function of organisms at the molecular and cellular levels. A detailed exploration of the chemistry of life, the cell, and genetics.	Prerequisites: A grade of C or better in RDG100 or RDG100LL or higher or eligibility for CRE101. One year of high school or one semester of college-level biology and chemistry is strongly recommended.	LEC 4.0 3.0 3.0 LAB 0.0 4.0 4.0
BIO182	General Biology (Majors) II	The study and principles of structure and function of living things at cellular, organismic, and higher levels of organization. A detailed exploration of the mechanisms of evolution, biological diversity, biology of organisms, and ecology.	Prerequisites: A grade of C or better in BIO181 or BIO181XT.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO182XT	General Biology (Majors) II	The study and principles of structure and function of living things at cellular, organismic, and higher levels of organization. A detailed exploration of the mechanisms of evolution, biological diversity, biology of organisms, and ecology.	Prerequisites: A grade of C or better in BIO181 or BIO181XT.	LEC 4.0 3.0 3.0 LAB 0.0 4.0 4.0
BIO192	Recitation in Biology	Discussion, guided practice and problem solving related to a topically focused area of biology.	Prerequisites: None. Corequisites: Any 100-level BIO Biology course or permission of Instructor.	L+L 1.0 1.0 1.0
BIO194AA	Special Topics in Biology	Conceptual and research basis of a current topic in biology.	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
BIO194AB	Special Topics in Biology	Conceptual and research basis of a current topic in biology. Includes integrated laboratory and/or field applications of related methodologies.	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0

BIO194AC	Special Topics in Biology	Conceptual and research basis of a current topic in biology. Includes laboratory and/or field applications of related methodologies.	Prerequisites: Permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
BIO195AA	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in (BIO181 or CHM151 or PHY111) or permission of Instructor.	L+L 1.0 2.0 2.0
BIO195AB	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in (BIO181 or CHM151 or PHY111) or permission of Instructor.	L+L 2.0 4.0 4.0

BIO195AC	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in (BIO181 or CHM151 or PHY111) or permission of Instructor.	L+L 3.0 6.0 6.0
BIO201	Human Anatomy and Physiology I	Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system.	Prerequisites: (A grade of C or better in BIO156 or BIO156XT or BIO181 or BIO181XT or one year of high school biology) and a grade of C or better in RDG100 or RDG100LL or higher or eligibility for CRE101. CHM130 or higher or one year of high school chemistry suggested but not required.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO201XT	Human Anatomy and Physiology I	Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system.	Prerequisites: (A grade of C or better in BIO156 or BIO156XT or BIO181 or BIO181XT or one year of high school biology) and a grade of C or better in RDG100 or RDG100LL or higher or eligibility for CRE101 as indicated by reading placement test score. CHM130 or higher or one year of high school chemistry suggested but not required.	LEC 4.0 3.0 3.0 LAB 0.0 4.0 4.0
BIO202	Human Anatomy and Physiology II	Continuation of structure and function of the human body. Topics include endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems; and fluid and electrolyte balance.	Prerequisites: A grade of C or better in BIO201 or BIO201XT.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

BIO205	Microbiology	Study of microorganisms and their relationship to health, ecology, and related fields.	Prerequisites: (A grade of C or better in BIO156 or BIO156XT or BIO181 or BIO181XT or one year of high school biology) and a grade of C or better in RDG100 or RDG100LL or higher or eligibility for CRE101. CHM130 or higher or one year of high school chemistry suggested but not required.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO207	Applied Plant Taxonomy	Overview of the flora and vegetation types of Arizona, emphasizing species and vegetation of central Arizona; covers morphology, taxonomy, identification, and natural history of important plant families, and important exotic and invasive species; examination of live plant material both in class and during field trips.	Prerequisites: A grade of C or better in BIO182 or permission of Instructor.	LEC 3.0 3.0 3.0
BIO208	Nucleic Acid Methods	Intensive introduction to laboratory methods for the isolation, purification, manipulation analysis and quantification of nucleic acids.	Prerequisites: A grade of C or better in [BIO156 or BIO181 and (BIO173 and BIO175)], or permission of Instructor.	L+L 3.0 6.0 6.0
BIO209	Biomolecular Separation	Introduction to industrial laboratory biotechnology with intensive focus on the recovery of heterologous proteins and other biomolecules from cultivated cells and the subsequent recovery, purification and characterization of these molecules.	Prerequisites: A grade of C or better in [BIO181 or BIO156 and (BIO173 and BIO175)] or permission of Instructor.	L+L 3.0 6.0 6.0
BIO210	Advanced Lab Instrumentation	Provides training in the principles, operation and interpretation of data from laboratory instrumentation.	Prerequisites: A grade of C or better in BIO208, or BIO209, or permission of Instructor.	L+L 3.0 6.0 6.0
BIO211AA	Biotechnology Seminar: Biomedical Applications	Special topics in biotechnology with an emphasis on current issues not covered in other life science courses	Prerequisites: None.	LEC 1.0 1.0 1.0
BIO211AB	Biotechnology Seminar: Laboratory Protocol	Special topics in biotechnology with an emphasis on current issues not covered in other life science courses	Prerequisites: A grade of C or better in BIO211AA or permission of Instructor.	LEC 1.0 1.0 1.0

BIO211AC	Biotechnology Seminar: Current Topics in Agriculture	Special topics in biotechnology with an emphasis on current issues not covered in other life science courses	Prerequisites: A grade of C or better in BIO211AB or permission of Instructor.	LEC 1.0 1.0 1.0
BIO211AD	Biotechnology Seminar: Ethical and Moral Issues	Special topics in biotechnology with an emphasis on current issues not covered in other life science courses	Prerequisites: A grade of C or better in BIO211AC or permission of Instructor.	LEC 1.0 1.0 1.0
BIO211AE	Biotechnology Seminar: Business and Regulatory Issues	Selected topics in biotechnology with an emphasis on current issues not covered in other life science courses	Prerequisites: None.	LEC 1.0 1.0 1.0
BIO212AA	Biotechnology I	Intensive introduction to biotechnology, including media and solution preparation, routine manipulations of DNA, structural properties of DNA, and regulation of gene expression.	Prerequisites: A grade of C or better in BIO181 or BIO247 or Corequisites: BIO181 or BIO247 or permission of Instructor.	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0
BIO212AB	Biotechnology II	Intensive introduction to biotechnology, including protein biochemistry, techniques for handling and purifying proteins, recombinant deoxyribonucleic acid (DNA), sequencing deoxyribonucleic acid (DNA), testing deoxyribonucleic acid (DNA) fragments for promoter activity and analysis of deoxyribonucleic acid (DNA) for open reading frames, promoters, and homology	Prerequisites: A grade of C or better in BIO212AA.	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0
BIO212AC	Biotechnology III	Intensive introduction to biotechnology, including techniques for working with proteins, especially antibodies. Testing for presence of and purifying antibodies. Techniques for working with eukaryotic cells	Prerequisites: A grade of C or better in BIO212AB.	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0
BIO212BA	Cell Biotechnology	Introduction to industrial laboratory biotechnology with intensive focus on the recovery of heterologous proteins from cultivated cells and the subsequent purification and characterization of these proteins.	Prerequisites: A grade of C or better in ENG101 and (BIO181 or BIO212AA).	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0

BIO213	Biotechnology Refresher	Opportunity for students who need more practice with biotechnology laboratory techniques to review their skills.	Prerequisites: A grade of C or better in (BIO208 or BIO209 or BIO212AA or BIO212BA) and permission of Program Director.	L+L 2.0 6.0 6.0
BIO215AB	Biotechnology Internship	Internship experience in a biotechnology laboratory. Setting, achieving, and evaluating goals for hands-on learning experience in a biotechnology laboratory. Development of skills and knowledge needed to work in a biotechnology laboratory.	Prerequisites: A grade of C or better in (BIO208 or BIO209 or BIO213) and permission of Program Director.	LAB 2.0 2.0 0.0
BIO215AC	Biotechnology Internship	Internship experience in a biotechnology laboratory. Setting, achieving, and evaluating goals for hands-on learning experience in a biotechnology laboratory. Development of skills and knowledge needed to work in a biotechnology laboratory.	Prerequisites: A grade of C or better in (BIO208 or BIO209 or BIO213) and permission of Program Director.	LAB 3.0 3.0 0.0
BIO220	Biology of Microorganisms	Detailed study of microbial cells, their structure, genetics, physiology and taxonomy.	Prerequisites: A grade of C or better in BIO181. Corequisites: (CHM152 and CHM152LL) or (CHM154 and CHM154LL).	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO234	Fundamental Evolutionary Biology	Fundamentals of evolutionary theory including natural selection, adaptation, species concepts, speciation, extinction, basics of phylogenetics, molecular and population genetics, and the evolution of sex and sociality.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: BIO182 or permission of Instructor.	LEC 3.0 3.0 3.0

BIO240	General Genetics	Intensive introduction to the field of genetics including historical perspective, Mendelian insights and patterns of inheritance, exceptions to expected Mendelian ratios, quantitative genetics, non-Mendelian inheritance, pedigree analysis, molecular levels of gene expression, genetic control of metabolic pathways, analytic dissection of molecular mechanisms behind DNA replication, transcription, translation, and gene regulation in both prokaryotes and eukaryotes, population genetics, genetics of behavior, and genetics of evolution and speciation	Prerequisites: A grade of C or better in BIO181.	LEC 4.0 4.0 4.0
BIO241	Human Genetics	An introduction to the basic concepts of human heredity and cytogenetics including Mendelian, molecular, and population genetics	Prerequisites: A grade of C or better in BIO100 or BIO181 or equivalent or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO244	General Genetics Laboratory	Introductory laboratory course in support of BIO240. Designed to familiarize students with basic laboratory skills and equipment used in genetic research	Prerequisites: A grade of C or better in BIO181. Corequisites: BIO240.	LAB 1.0 3.0 3.0
BIO245	Cellular and Molecular Biology	Concepts that underline relationship between cellular and subcellular structure and function, and integration of major metabolic and genetic processes. Includes introduction to the use of bacteriology in molecular biology, various methods of studying macromolecules found in eukaryotic and prokaryotic cells, cloning, and purification of DNA	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO247	Applied Biosciences: Biotechnology	Applies concepts of molecular and cellular biology of bacteria, animals, and plants to real-world problems.	Prerequisites: A grade of C or better in BIO181. One semester of college-level chemistry or equivalent recommended.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

BIO249	Applied Biosciences: Biotechnology Internship	Internship/work experience in a biotechnology laboratory. Setting, achieving, and evaluating goals for hands-on learning experiences in a biotechnology laboratory. Development of skills and knowledge needed to work in a biotechnology laboratory.	Prerequisites: A grade of C or better in BIO247 or permission of Instructor.	LAB 4.0 4.0 0.0
BIO254	Entomology	Form, activities, and classification of insects	One semester of college-level biology or equivalent or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO270	Sustainable Biological Systems	Course to introduce concepts in Ecology covering abiotic and biotic systems, population biology and ecology, community ecology, biotic communities, disturbance and succession, biogeography, fire ecology, evolution in changing environments, human population biology, and issues in ecology.	Prerequisites: A grade of C or better in BIO181.	LEC 3.0 3.0 3.0
BIO274	Introduction to Wildlife Management	Introduction to the field of wildlife biology/management and the legal, cultural, ecological, and population dynamics of wildlife biology and management. Covers wildlife management objectives, management techniques, research techniques, and the organizational environment that wildlife biologists work in; provides an overview of careers in the field and guidance in planning a career.	Prerequisites: High school biology with a grade of C or better or a grade of C or better in BIO100 or BIO181 or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
BIO276	Scientific Diving	Theory and practice of underwater research using snorkel and self-contained underwater breathing apparatus (SCUBA). Advanced diving skills, data acquisition and processing, and planning an underwater study.	Prerequisites: A grade of C or better in PED101SU or PED201SU (any certification card from a nationally recognized agency.) BIO145 or BIO181 recommended but not required.	L+L 3.0 4.0 4.0



BIO280	Animal Behavior	A study of the genetics, physiology, ecology, and evolutionary history of animal behavior.	Prerequisites: A grade of C or better in BIO100 or BIO105 or BIO181 or equivalent or permission of Instructor.	LEC 3.0 3.0 3.0
BIO282AA	Service-Learning Experience in Biology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
BIO282AB	Service-Learning Experience in Biology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
BIO282AC	Service-Learning Experience in Biology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
BIO283	Bioinformatics and Scientific Computing	Introduction to bioinformatics, including history, concepts, major genetic databases and access tools. Computer software and techniques for analyzing one nucleotide or protein sequence, searching for similar sequences, and aligning and comparing two or multiple sequences. Microarray analysis and phylogenetic trees. Application of standard software to bioinformatic computing tasks, including word processing of reports, and use of spreadsheets for statistical analysis and graphing. Text editors, Unix, Internet web site searching and construction, and ethics.	[(BIO156 or BIO181) and (MAT120 or MAT121 or MAT122 or higher-level mathematics course)], or permission of Instructor. Concurrent enrollment in, or previous completion of, BIO208 or BIO212AA is strongly suggested but not required.	L+L 3.0 4.0 4.0
BIO292	Advanced Recitation in Biology	Discussion, guided practice and problem solving related to advanced topics in biology.	Prerequisites: None. Corequisites: Any 200-level BIO Biology course or permission of Instructor.	L+L 1.0 1.0 1.0
BIO294AA	Special Topics in Biology- Advanced	Advanced evidence-based study of a current topic in biology from a research and theoretical perspective.	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
BIO294AB	Special Topics in Biology-Advanced	Advanced evidence-based study of a current topic in biology from a research and theoretical perspective. Includes integrated laboratory and/or field applications of related methodologies.	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0

BIO294AC	Special Topics in Biology-Advanced	Advanced evidence-based study of a current topic in biology from a research and theoretical perspective. Includes integrated laboratory and/or field applications of related methodologies.	Prerequisites: Permission of Instructor.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
BIO295AA	Independent Research in Biology	Original scientific investigation of biological phenomenon.	Prerequisites: A grade of C or better in (BIO156 or BIO181) and permission of Instructor.	LAB 1.0 1.0 0.0
BIO295AB	Independent Research in Biology	Original scientific investigation of biological phenomenon.	Prerequisites: A grade of C or better in (BIO156 or BIO181) and permission of Instructor.	LAB 2.0 2.0 0.0
BIO295AC	Independent Research in Biology	Original scientific investigation of biological phenomenon.	Prerequisites: A grade of C or better in (BIO156 or BIO181) and permission of Instructor.	LAB 3.0 3.0 0.0
BIO296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
BIO296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

BIO296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
BIO296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
BIO298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

BIO298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
BIO298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
BKL105	Basic Masonry Skills and Trade Calculations I	Bricklaying trade history, apprenticeship, jurisdiction, and employment opportunities. Basic hand tools and safety issues. Trade skills and masonry tools. Types, uses, handling, and properties of masonry materials. Trade calculations including linear measurement, area, and volume	Registered Apprentice status with the Phoenix Bricklaying and Tilesetting Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
BKL115	Basic Masonry Skills and Trade Calculations II	Tools and equipment selection, use, maintenance and care. Measurement systems and trade calculations. Architectural drawings, schedules, and specifications. Specific construction plans and drawings. Wall construction, bricklaying assignments, and reinforced masonry	Registered Apprentice status with the Phoenix Bricklaying and Tilesetting Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

BKL205	Advanced Brick and Block Construction	General job site safety. Use of the metric system as it applies to bricklaying and masonry construction. Basic construction drawings. Numbers, symbols, abbreviations and names associated with bricklaying and masonry construction. Construction procedures and trade practices including walls, corners, arches, members, details, and combustible chambers. Moisture control	Registered Apprentice status with the Phoenix Bricklaying and Tiletsetting Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
BKL215	Blueprint Reading: Residential and Light Construction	Language and symbols of blueprint reading. Working drawings of brick veneer residential, light commercial, and light frame structures. Types of light frame construction and specifications for residential structure. Metric system adoption, effect on construction, and conversions for measurement and quantity	Registered Apprentice status with the Phoenix Bricklaying and Tiletsetting Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
BKL225	Blueprint Reading: Heavy Commercial	The building planning process. Blue print divisions, specifications, symbols, abbreviations, and interpretations. Building Specifications, legal requirements, materials, procedures, and quality control. Construction Specifications Institute (CSI) format and divisions. Estimating, project budgeting, and job completion	Registered Apprentice status with the Phoenix Bricklaying and Tiletsetting Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
BKL235	Masonry Estimating and Formal Bidding	Estimating techniques, quantities of labor, materials, and equipment. Masonry, concrete and reinforcing steel, and steel member costs. Contract development and formal bid processes	Registered Apprentice status with the Phoenix Bricklaying and Tiletsetting Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

BKL298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
BKL298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
BKL298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
BLT101	Introduction to Construction Trades	Introduction to trade and craft apprenticeships in Arizona, including concrete, carpentry, millwright, pipefitting, steamfitting and plumbing, sheet metal, painter, decorator and drywall taper, electrician and ironworker	Prerequisites: None.	LEC 1.0 1.0 1.0

BLT120	Techniques of Building Inspection	Theory and practice of zoning, foundation, structural, mechanical and electrical inspection in modern residential and commercial construction	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT121	Electrical Codes	Principles of safe electrical installations and proper inspection procedures. Topics include conduit installation, transformer service, raceways, control circuits, grounding and bonding, hazardous occupancies and the National Electrical Code	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT122	Basic Engineering for Building Inspectors and Contractors I	Basic engineering mechanics, gravity loads, shears, bending moments, wood frame construction, deck joints, beams, columns, bracing and shear walls.	Prerequisites: A grade of C or better in BLT120 and MAT187 or equivalent or permission of Department or Division.	LEC 3.0 3.0 3.0
BLT124	Designing for the Americans with Disabilities Act(ADA)	In-depth analysis of federal standards described in the Americans with Disabilities Act (ADA). Reviews the state of Arizona's enforcement document (AzDAAG). Focuses on helping designers, architects, and building officials create barrier-free buildings and facilities	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT125	Residential Electrical Codes	National Electrical Code requirements for safe electrical installations and proper inspection procedures in residential buildings. Topics include branch circuitry, feeder calculations, services grounding, overcurrent protection, wiring methods, types and proper usage of material, swimming pool installation	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT126	Soil Mechanics	Soil conditions as related to modern building requirements. Topics include bearing value, classification and identification, exploration and samplings, behavior of fills, compaction, subsurface drainage, and field sampling.	Prerequisites: A grade of C or better in MAT150 or MAT151 or MAT152 or satisfactory score on District placement exam.	LEC 3.0 3.0 3.0

BLT127	Plumbing Codes	Code requirements and construction practices. Topics include underground and above ground plumbing, venting and finish plumbing	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT128	Mechanical Codes	Code requirements and construction practices. Topics include duct work, conductors and fuel supply, insulation, and controls	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT129	Materials of Construction	Fundamental characteristics of modern construction materials and the effective use of these materials in construction	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT131	Applied Electric Codes	National Electric Code (NEC) administration and application. NEC requirements for safe installation of system control equipment and design of electric utilization systems. Identification of wiring systems and permitted uses. Application of NEC requirements for hazardous locations, specific occupancies, and special uses of electric equipment	Prerequisites: None.	LEC 4.0 4.0 4.0
BLT132	Applied Plumbing Codes	Plumbing code administration. Application, design and installation of drainage/waste and venting systems in private and public buildings. Application of plumbing codes for design and installation of water systems	Prerequisites: None.	LEC 4.0 4.0 4.0



BLT140	Environmentally Responsible Building	An overview of environmentally responsible building and a historical survey of building methodologies. Introduces design concepts and strategies related to the mitigation of environmental impacts. Examines building processes, environmental issues and the interdependent nature of our built environment. Topics include human impacts, climate and geography, sustainability, renewable energies, water use and energy, resource efficiency, building materials, indoor air quality and waste reduction	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT142	Green Building Codes, Standards and Rating Systems	Surveys green building rating systems, environmental building standards and green construction codes; addresses the broader scope of public health, safety and general welfare in the context of regulations and the natural environment; examines site development and land use, material resource conservation, energy efficiency, water resource conservation, indoor environmental quality, building commissioning, operation and maintenance; includes exercises demonstrating the use of tools and applying the principles discussed during the course.	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT191	Applied Plumbing Codes	Uniform plumbing code and plumbing systems installation requirements. Code administration as well as requirements relative to the installation and maintenance of plumbing systems.	Prerequisites: None.	LEC 3.0 3.0 3.0

BLT200	Construction Management: Field Operations	Skills and techniques necessary for management of construction field operations. Includes job scheduling, inspection techniques, personnel relations, safety, and the scope and supervision of the overall construction process.	Prerequisites: A grade of C or better in DFT126 and GTC121 or departmental permission.	LEC 3.0 3.0 3.0
BLT201	Construction Management: Office Operations	Develops the skills and techniques necessary for successful management of construction office operations. Includes establishing and financing the business, marketing, office operations, and relationships with other construction industry entities	Prerequisites: A grade of C or better in DFT122 or DFT126 or GTC121 or permission of Instructor.	LEC 3.0 3.0 3.0
BLT263AK	Building Codes: IBC	Designed specifically to acquaint students with safety principles of building construction under the International Building Code (IBC), including structural requirements for wood, masonry and concrete, fire resistance of building construction, fire resistant materials, and ratings and occupancy requirements	Prerequisites: None.	LEC 3.0 3.0 3.0
BLT263AL	Building Codes: IRC	Designed specifically to acquaint students with safety principles of building construction under the International Residential Code, including structural requirements for wood, masonry and concrete, fire resistance of building construction, fire resistant materials, and ratings and occupancy requirements	Prerequisites: None.	LEC 3.0 3.0 3.0

BLT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
BLT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
BLT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

BLT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
BLT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
BLT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

BLT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
BME101	Introduction to Biomedical Equipment Technology	Introduces fundamental concepts of the field of biomedical equipment technology. Emphasis on the responsibilities of the technician, electrical safety, and knowledge of devices and their functions, maintenance, and repair.	Prerequisites: A grade of C or better in ELE111, BIO160 and (HCC145 or HCC145AA).	LEC 3.0 3.0 3.0
BPC100AA	Business-Personal Computers I	Introduction to the use of personal computers in the business environment. Computer hardware components, operating system functions and concepts. Running application software	Prerequisites: None.	LEC 0.5 0.5 0.5
BPC100AB	Business-Personal Computers II	Use the personal computer to create, store and retrieve information. Procedures for running and using business application software to produce documents and spreadsheets	Prerequisites: A grade of C or better in BPC100AA or permission of Instructor.	LEC 0.5 0.5 0.5
BPC100AD	Computing Fundamentals	Fundamental computer concepts and terminology for business and personal computers	Prerequisites: None.	L+L 1.0 2.0 2.0
BPC100BD	Key Software Applications	Covers basic features of software applications for business and personal computers	Prerequisites: None.	L+L 1.0 1.0 1.0
BPC100CD	Living Online	Fundamental network and Internet concepts and terminology for business and personal computers. Covers basic features of electronic mail applications	Prerequisites: None.	L+L 1.0 1.0 1.0

BPC100DD	Internet and Computing Fundamentals	Fundamental computer and Internet concepts and terminology for business and personal computers. Covers basic features of software applications	Prerequisites: None.	L+L 3.0 4.0 4.0
BPC101	Introduction to Computers	Computer software applications for the personal computer, including electronic spreadsheet and word processing, keyboarding review, a desktop environment, database management, computer graphics and operating system commands. Individualized advanced applications of software selected to solve specific problems on the personal computer.	Prerequisites: None.	L+L 3.0 4.0 4.0
BPC101AA	Introduction to Computers I	Computer software applications for the personal computer, including electronic spreadsheet and word processing, keyboarding review, and a desktop environment.	Prerequisites: None.	L+L 1.0 2.0 2.0
BPC101AB	Introduction to Microcomputers I: Macintosh	Microcomputer software applications for the Macintosh personal computer, including electronic spreadsheet and word processing, keyboarding review, and a desktop environment	Prerequisites: None.	LEC 1.0 2.0 1.7
BPC101BA	Introduction to Computers II	Computer software applications for the personal computer, including database management, computer graphics, electronic spreadsheet, and word processing, and operating system commands	Prerequisites: A grade of C or better in BPC101AA.	L+L 1.0 1.0 1.0
BPC103AK	Using Word: Level I	Use of Word to create, manipulate and print documents on a microcomputer	Prerequisites: None.	LEC 0.5 0.5 0.5
BPC104AD	Using Excel: Level I	Use of Excel to create, edit, save and print worksheets	Prerequisites: None.	LEC 0.5 0.5 0.5

BPC104BD	Using Excel: Level II	Use of Excel to enhance worksheets to include graphing and formatting data, using complex formula and function expressions to build and analyze data, and special print options to output worksheets and graphs	Prerequisites: A grade of C or better in BPC104AD or permission of Instructor.	LEC 0.5 0.5 0.5
BPC104CD	Using Excel: Level III	Use of Excel to produce worksheets utilizing macros for template development and automation of repetitious tasks, and worksheet methods for the storage and management of data.	Prerequisites: A grade of C or better in BPC104BD or permission of Instructor.	LEC 0.5 0.5 0.5
BPC106AH	MS Outlook: Level I	Messaging and word processing functions of a Microsoft Outlook electronic work state	Prerequisites: None.	L+L 0.5 0.5 0.5
BPC106BH	Microsoft Outlook: Level II	Microsoft Outlook features including sort, filter and group items; templates and forms; information sharing by public folders and Net Folders; share and fax contacts; and record activities in the Journal. Outlook environment customization also covered	Prerequisites: A grade of C or better in BPC106AH or permission of Instructor.	L+L 0.5 0.5 0.5
BPC110	Computer Usage and Applications	Introduction to business and personal computer operations and usage. Software applications for analyzing and solving business problems including word processing, spreadsheet, database, and presentation graphics	Prerequisites: None.	L+L 3.0 4.0 4.0
BPC111AA	Computer Keyboarding I	Mastery of essential microcomputer keyboarding skills. Emphasis on touch typing of alphabetic and numeric keys and symbols	Prerequisites: None.	L+L 1.0 2.0 2.0
BPC111AB	Computer Keyboarding II	Further development of microcomputer keyboard speed and accuracy. Emphasis on touch typing with speed and accuracy development of numerals as related to preparation and handling of documents.	Prerequisites: A grade of C or better in BPC/OAS111AA or permission of Instructor.	L+L 3.0 4.0 4.0
BPC113	Micro-Alphabetic Indexing	Mastery of essential microcomputer filing skills. Emphasis on indexing and alphabetizing individual and business names; subject, geographic, and numeric methods; and cross-referencing.	Prerequisites: None.	L+L 1.0 1.7 1.7

BPC119	Basic Data Entry Activities	Development of speed and accuracy of data entry skills. Includes vocabulary, keyboard drills, and data entry simulations.	Prerequisites: A grade of C or better in (BPC111AA or OAS111AA or OAS101AA) or permission of Instructor. OAS118 recommended but not required.	LAB 1.0 2.0 2.0
BPC125	Microcomputer Set Up and Maintenance	How to install and maintain a microcomputer (personal computer). Steps used to set up a new or add options to a previously installed microcomputer. Installation of internal options (memory, graphics, modems, etc.), as well as external options and devices (printers, monitors, communications, etc.). Troubleshoot (identify and repair or have repaired) microcomputer problems	Prerequisites: None.	L+L 1.0 1.0 1.0
BPC128	Introduction to Desktop Publishing	Presents basic concepts of commercially prepared software used to do desktop publishing. Incorporates a combination of narrative and pictorial/graphic creation and presentation, including set-up, text entry, graphic generation, text and graphic merging, and other computer-based functions	Prerequisites: None.	L+L 1.0 2.0 2.0
BPC128AF	Introduction to Desktop Publishing: MS Publisher	Presents basic concepts of commercially prepared software used to do desktop publishing. Incorporates a combination of narrative and pictorial/graphic creation and presentation, including set-up, text entry, graphic generation, text and graphic merging, and other computer-based functions	Prerequisites: None.	L+L 1.0 2.0 2.0
BPC138AA	Windows Desktop Design and Publishing	Use of Windows based microcomputers and appropriate commercial software package to compose and print textual and graphic materials of high quality. Includes overview of micro operating system, word processing of copy, use of graphics programs, layout of design elements, and printing alternatives.	Prerequisites: A grade of C or better in CIS105 or BPC110 or permission of Instructor.	L+L 3.0 4.0 4.0



BPC160	AppleCare: Service Fundamentals	Prepares students to become certified in repairing and troubleshooting iOS or macOS devices. It prepares the students for the AppleCare Certified technician exams: Apple Certified iOS Technician (ACIT) and Apple Certified Mac Technician (ACMT). Students will learn the Apple service style for customer interactions, safety precautions, and basic troubleshooting skills.	Prerequisites: None.	L+L 3.0 4.0 4.0
BPC170	A+ Exam Prep: Computer Hardware Configuration and Support	Explore technical aspects of personal computers, including system components, installation, system configuration, peripheral devices, and notebooks. Emphasis placed on hardware installation, maintenance, mobile devices, and hardware troubleshooting. Helps prepare students for the CompTIA A+ examinations.	Prerequisites: None.	L+L 3.0 4.0 4.0
BPC171	Recycling Used Computer Technology	Use of hardware maintenance knowledge and skills to refurbish used computers.	Prerequisites: A grade of C or better in BPC170 or Corequisites: BPC170 or permission of Instructor.	L+L 1.0 2.0 2.0
BPC210	Advanced Computer Usage and Applications	Advanced application of software for business and personal computers including word processing, spreadsheet, database, and presentation. Includes integration of applications and Internet	Prerequisites: A grade of C or better in BPC110 or permission of Instructor.	L+L 3.0 4.0 4.0
BPC225	Computer Configuration and Enhancement	Configuration and enhancement of a computer. Emphasis on configuration of hardware and software to optimize computer performance. Includes memory configuration and the identification and troubleshooting of configuration problems	Prerequisites: A grade of C or better in BPC125 or permission of Instructor.	L+L 1.0 2.0 2.0
BPC250	Post-Advanced Computer Usage and Applications	Post-advanced applications of software for business and personal computers including word processing, spreadsheet, database, and presentation. Includes integration of applications and Internet	Prerequisites: A grade of C or better in BPC210 or permission of Instructor.	L+L 3.0 4.0 4.0

BPC260	AppleCare: Apple Certified iOS Technician (ACiT)	Enables students to become certified in repairing and troubleshooting iOS devices. Prepares students for the AppleCare technician exam: Apple Certified iOS Technician (ACiT) and to perform warranty level hardware repairs on Apple iOS devices.	Prerequisites: A grade of C or better in BPC160.	L+L 3.0 4.0 4.0
BPC262	AppleCare: Apple Certified Mac Technician (ACMT)	Enables students to become certified in repairing and troubleshooting MacOS devices. Prepares the students for the AppleCare technician exam: Apple Certified Mac Technician (ACMT) and to perform warranty level hardware repairs on Apple iOS devices.	Prerequisites: A grade of C or better in BPC160.	L+L 3.0 4.0 4.0
BPC270	A+ Exam Prep: Operating System Configuration and Support	Explore advanced technical aspects of maintaining and servicing computers. Emphasis placed on OS installation, maintenance, mobile devices, security, software troubleshooting, and on proper usage of tools, safety procedures, and professionalism. Helps prepare students for the CompTIA A+ examinations.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
BPC278	Software Installation - MS Windows	Installing and configuring microcomputer software. Emphasis placed on the installation, configuration, upgrade, and related problem resolution of microcomputer operating system and applications software	CIS105 BPC114 CIS114 (any module whose course number suffix begins with a D) BPC117 CIS117 (any module whose course number suffix begins with a D) and BPC170 with grade of C or better or permission of Instructor.	L+L 3.0 4.0 4.0
CAD100	Fundamentals of 2D AutoCAD	Utilize AutoCAD software to generate two-dimensional (2-D) drawings and components in a generic installation. Apply basic AutoCAD commands and properties to format, draw, edit, layer, dimension, import/export, and manage drawing files. Creation, manipulation, and hardcopy production of 2-D drawing files from major AutoCAD command and display environments and plot options	Prerequisites: None.	L+L 3.0 6.0 6.0

CAD101	Elements of CAD Graphics (AutoCAD)	Computer generation of drafting and design components using pure elements and basic geometric procedures. Incorporates concept illustration based on standard pictorial methods and develops multi-view projection techniques and presentation methods. Introduction to the fundamentals of three-dimensional (3D) modeling and the construction and printing of 3D objects.	Prerequisites: A grade of C or better in CAD100 or Corequisites: CAD100 or permission of Instructor.	L+L 3.0 6.0 6.0
CAD103AA	Basic Print Reading for Manufacturing	Basic print reading knowledge and skills necessary for workers in the manufacturing field. Visualization, interpretation and analysis of common manufacturing drawings, and other design documentation	Prerequisites: None.	LEC 1.0 1.0 1.0
CAD105	Fundamentals of Revit Architecture	Introduction to Revit Architecture. Utilize Revit software to develop and generate basic 3-D models and components. Create, edit, dimension, and manage 2-D and 3-D drawing views and projects. Produce drawing files and plots using various display environments and plot options.	Prerequisites: A grade of C or better in CAD100 or (previous architectural and CAD experience, and permission of Department or Division).	L+L 3.0 6.0 6.0
CAD106	Fundamentals of Civil 3D	Introduction to Civil 3D. Utilize Civil 3D software to develop and generate basic 3D models and components. Create, edit, dimension, and manage 2D and 3D drawing views and projects. Produce drawing files and plots using various display environments and plot options.	Prerequisites: A grade of C or better in CAD100 or (previous civil and CAD experience, and permission of Department or Division).	L+L 3.0 6.0 6.0
CAD120AH	Getting Started with CAD: Microstation	Basic Commands; drawing aids; input devices; use of default settings	Prerequisites: None.	L+L 1.0 2.0 2.0
CAD125AH	Drawing Database Management: Microstation	Operating the system file manager. Establishing, updating, managing, and maintaining a CAD drawing database	Prerequisites: A grade of C or better in CAD120AH or permission of Instructor.	L+L 1.0 2.0 2.0

CAD145	Design Principles for Industry	Survey of the basic standards and procedures for drawing setups and design documentation in the fields of architecture, manufacturing, and civil technology. Multi-source hard copy design presentation.	Prerequisites: A grade of C or better in (CAD100 and CAD101) or permission of Instructor.	L+L 3.0 6.0 6.0
CAD150AH	Two-Dimensional CAD: Microstation	Constructing scaled two-dimensional drawing using CAD.	Prerequisites: A grade of C or better in CAD125AH or permission of Instructor.	L+L 1.0 2.0 2.0
CAD158	Working Drawings	Using CAD for the design and documentation of a complete set of working drawings and their specifications. Preparation of working drawings using either the American National Standards Drafting Manual-Y14 (ANSI Y-14-1975 R1987) or the International (ISO) Standard	Prerequisites: A grade of C or better in (CAD152 and CAD156) or permission of Instructor.	L+L 1.0 2.0 2.0
CAD160	Residential Architectural Drafting	Basic skills associated with board drafting in the architectural field	Prerequisites: A grade of C or better in (CAD105 CAD110 and CAD115) or permission of Instructor.	L+L 2.0 4.0 4.0
CAD164	Residential Working Drawings	Team projects in the development of a set of architectural working drawings for a residence.	Prerequisites: A grade of C or better in CAD145 or permission of Instructor.	L+L 3.0 6.0 6.0
CAD165	Architectural Software (AutoCAD Architecture)	Introduction to AutoCAD Architecture, a modeling software used by architecture professionals. Procedures unique to advanced software and pertinent to architectural documentation. Emphasis on residential working drawings.	Prerequisites: A grade of C or better in CAD145 or permission of Instructor. CAD255 is highly recommended.	L+L 3.0 6.0 6.0
CAD167	Architectural Drawings I (Revit): Residential CAD	Use of Revit architectural modeling software to develop 3-D architectural models, working drawings, construction documentation, and renderings. Emphasis on residential working drawings.	Prerequisites: A grade of C or better in CAD105 or permission of Department or Division.	L+L 3.0 6.0 6.0

CAD175	Manufacturing Modeling and Design	Specialized training in parametric parts and assembly modeling with an emphasis in manufacturing design. Design, construction and documentation of primitive, regional, and composite models using American National Standards Institute (ANSI) and International Organization for Standardization (ISO) standards.	Prerequisites: A grade of C or better in CAD100 or Corequisites: CAD100 or permission of Department or Division or Instructor.	L+L 3.0 6.0 6.0
CAD186	Site Development I	Use coordinate geometry and survey point databases to create topographic maps utilizing civil engineering/surveying application software. Volumetric analysis of earthwork (cut and fills) utilizing civil engineering/surveying application software. Production of base mapping, earthwork, grading, and drainage plan utilizing civil engineering/surveying application software.	Prerequisites: A grade of C or better in CAD106 or permission of Instructor.	L+L 3.0 6.0 6.0
CAD201	Three-Dimensional (3D) Modeling and Advanced CAD Techniques	Advanced Computer Aided Drafting (CAD) techniques including the automation and semi-automation of design documentation, external referencing and attribute creation and manipulation. Development of three-dimensional (3D) models including construction, manipulation, rendering and 2D/3D output.	Prerequisites: A grade of C or better in (CAD100 and CAD101) or permission of Instructor.	L+L 3.0 6.0 6.0
CAD215	Three-Dimensional AutoCAD Modeling	Reduction of 3D design concepts to coordinate space and procedural syntax required for AutoCAD 3D file development. Manipulation of wireframes; surfacing techniques; development of solids using Boolean operations. Production of standard displays and outputs involving 3D objects	Prerequisites: A grade of C or better in (CAD100 and CAD101) or permission of Instructor.	L+L 3.0 6.0 6.0

CAD235	Modeling, Rendering and Animation for Technical Presentations	Entry level course in technical modeling, visualization, and animation. Uses 3D modeling software, rendering, and animation tools to visualize and solve design issues. Development of professional quality presentation materials for design projects.	Prerequisites: A grade of C or better in CAD201 or CAD215 or Corequisites: CAD201 or CAD215 or permission of Department or Division.	L+L 3.0 6.0 6.0
CAD245	Design and Modeling of Mechanisms	Specialized training in the design of manufactured products using commercially available mechanisms and hardware. Specific applications include: cams, gears, specification control parts, and operating sheets (O.S.) and methods of tooling (M.O.T.)	Prerequisites: A grade of C or better in CAD175 or permission of Instructor.	L+L 3.0 6.0 6.0
CAD255	Structural Details	CAD-based instruction in the development of framing plans, sections, and details of typical southwestern construction systems. Creation of personal standard detail files for wood, concrete/ masonry, and steel construction systems. Includes applicable codes, materials, methods, and office practices	Prerequisites: A grade of C or better in CAD145 or permission of Instructor.	L+L 3.0 6.0 6.0
CAD256	CAD Customization and Management	Emphasis on developing customized user interfaces and basic programming skills. Installation and configuration of software processes. File management techniques; file archival, batch plotting, file conversion, and CAD standards.	Prerequisites: A grade of C or better in CAD215 or DFT254AA or permission of Department or Division.	L+L 3.0 6.0 6.0
CAD265	Architectural Software (AutoCAD Architecture) II: Commercial CAD	Use of AutoCAD Architecture, an architectural modeling software to generate features associated with commercial building design. CAD treatment of selected details and other structural practices common to nonresidential buildings. Emphasis on the practices and standards of working drawings.	Prerequisites: A grade of C or better in CAD165. CAD255 is highly recommended.	L+L 3.0 6.0 6.0

CAD267	Architectural Drawings (REVIT) II: Commercial CAD	Use of REVIT architectural modeling software utilized by the architectural industry to generate plans and features associated with commercial building design. Focus on CAD development of selected plans, details, and structural practices common to nonresidential buildings.	Prerequisites: A grade of C or better in CAD167 or permission of Department or Division.	L+L 3.0 6.0 6.0
CAD269	Computer Aided Landscape Design	Using AutoCAD to create landscape design drawings and wire frames in Sketchup for elevations, sections and perspective sketches.	Prerequisites: A grade of C or better in : (AGB139 or CAD100 or CAD101) and AGL189 or permission of Instructor.	L+L 3.0 6.0 6.0
CAD270	SolidWorks Application and Analysis Modules	Specialized training in the design of manufactured products using commercially available mechanisms and hardware. Specific applications include: cams, gears, specification control parts, operating sheets (OS) and methods of tooling (MOT).	Prerequisites: A grade of C or better in CAD245 or permission of Department or Division.	L+L 3.0 6.0 6.0
CAD274	Residential Design CAD	Developing designs with plans and details based on current design vogues. CAD problem solving associated with design	Prerequisites: A grade of C or better in (CAD152 and CAD164) or permission of Instructor.	L+L 3.0 6.0 6.0
CAD281	Electro-Mechanical Product Documentation	Specialized training in the documentation and design of electro-mechanical products, using various sources of design information as part of the manufacturing process. Typical construction documents for this class will include block, schematic, logic, and interconnect diagrams, electronic component assemblies (ECA), printed wiring board packages, and chassis and rack design including front panel layout.	Prerequisites: A grade of C or better in CAD175 or permission of Instructor.	L+L 3.0 6.0 6.0
CAD282	HVAC and Sheet Metal Design	Drawing, design, and specification of heating, ventilating, and air conditioning (HVAC) systems. Basic types of heating and cooling systems, heat loss calculations, sheet metal development, and solar design	Prerequisites: A grade of C or better in (CAD150 and [two of CAD262 CAD264 CAD266 CAD268]) or permission of Instructor.	L+L 1.0 2.0 2.0

CAD286	Site Development II	Use a coordinate geometry and survey point database to create construction drawings utilizing civil engineering/surveying software.	Prerequisites: A grade of C or better in CAD186.	L+L 3.0 6.0 6.0
CAD287	Advanced Revit Techniques	Advanced use of Revit architectural modeling software utilized by the architectural industry. Develop custom families with parameters and formulas, generate conceptual mass plans, prepare design phasing for renovation and tenant improvement projects, and work with advanced features associated with architectural building design.	Prerequisites: A grade of C or better in CAD167 or permission of Department or Division.	L+L 3.0 6.0 6.0
CAD292	Current Developments in CAD Technology	The exploration and analysis of the newest software packages and/or plug-ins on the market designed to enhance or replace existing Computer Aided Drafting (CAD) software. Designed to introduce and develop skills in the latest state-of-the-art tools pertinent to industry today.	Prerequisites: A grade of C or better in CAD100 or permission of Department or Division.	L+L 1.0 2.0 2.0
CAD295	Design Geometry	CAD based graphical solutions for problems in architectural and engineering design. Study of the geometry of technical drawing with an emphasis on the space relationship of points, lines and planes. Develop skills used to resolve design problems using both analytical and graphical methods.	Prerequisites: A grade of C or better in (CAD201 and DFT107) or permission of Instructor.	L+L 3.0 6.0 6.0
CCS101	Chicana and Chicano Studies	Introduction to the wealth and diversity of Chicana and Chicano Studies research from a variety of disciplinary perspectives through the use of a series of historical and social scientific studies, novels, testimonios, and films	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0



CCS111	Introduction to Chicana and Chicano Culture	A study of Chicano popular culture, including cultural themes and artistic expression. Expression of the Chicano experience in American society from the perspective of the social sciences. Analyzes Chicano self-identity and social and cultural dynamics of the Chicano community	Prerequisites: None.	LEC 3.0 3.0 3.0
CCS202	Ethnic Relations in the United States	Basic concepts and processes, including historic overview, of interethnic relations in the United States: culture, race, ethnicity, ethnocentrism, prejudice, discrimination, racism, assimilation, acculturation, and individual and group responses to interethnic contact. Cultural knowledge and intercultural communication skills and perspectives as fundamental tools for successful management of social relations in a multicultural world.	Prerequisites: None.	LEC 3.0 3.0 3.0
CCS212	The Mexican American Novel	A study of the social, historical, and cultural backgrounds as well as the form and content of the Mexican American novel.	Prerequisites: ENG101 and ENH112 suggested but not required.	LEC 3.0 3.0 3.0
CCS282AA	Volunteerism for Chicana and Chicano Studies: A Service Learning Experience	Service learning field experience within private/public agencies such as museums and libraries, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
CCS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

CCS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CCS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CDH105	Community Oral Health Project Planning	Overview of Community Health Worker and the Community Dental Health Coordinator responsibilities. Includes advocacy concepts, process of advocacy in the community, and strategies for assisting underserved local populations in health and social services. Development of a personal health and wellness plan covered. Community outreach topics and strategies emphasized.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
CDH110	Oral Health Communication	Overview of oral health communication and oral health literacy for the Community Dental Health Coordinator. Impact of oral health literacy on one's health emphasized. Includes communication strategies, verbal and nonverbal communication skills.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0

CDH115	Interviewing Skills for Dental Health Advocate	Overview of patient assessment interviewing skills for the Community Dental Health Coordinator. Covers motivational interviewing, human behaviors, and health concepts emphasizing oral health. Patient assessment, feedback, education, and behavior change interventions for dental patients included	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
CDH120	Dental Health Coordination, Documentation and Reporting	Overview of coordination, documentation and reporting approaches for working with families as well as individuals. Includes family assessment, case documentation and overview of the services system. Also covers health care finance, the referral process and components of case management.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
CDH125	Dental Health Teaching and Learning Skills	Overview of teaching and learning skills as they apply to the Dental Health field. Includes teaching and learning techniques, goal setting and critical thinking. Also covers internet usage and safety as well as an introduction to concepts of Life Long Learning.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
CDH130	Dental Health Legal and Ethical Issues	Overview of legal and ethical issues in relation to the Community Dental Health Coordinator (CDHC). Covers policy, confidentiality and liability as well as Health Insurance Portability and Accountability Act (HIPAA) regulations. Also includes consumer protection and professional conduct.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
CDH205	Introduction to Dentistry	Introduction to clinical dental sciences. Emphasis on dental anatomy, general microbiology, infection control, and oral pathology. History of dentistry and dental organizations also covered.	Prerequisites: A grade of C or better in (BIO156 or BIO160) and CDH130.	L+L 3.0 4.0 4.0

CDH210	Dental Health Screening and Classification	Dental health screening and classification procedures. Includes data collection, patient screening techniques and the development of preventive plans. Also covers the physics and biology of radiation as well as procedures for completing various types of radiographs. Emphasis on safety including radiation exposure, universal infection control and patient management.	Prerequisites: A grade of C or better in (BIO156 or BIO160) and CDH130.	L+L 8.0 11.0 11.0
CDH215	Prevention of Dental Caries	Information and procedures for the prevention of dental caries. Includes risk factors and caries control as well as fluoride preparation and application. Also covers development of an Oral Hygiene Improvement Plan (OHIP) in addition to an introduction to dietary practices, nutritional literacy and use of effective recall systems.	Prerequisites: A grade of C or better in CDH205 and CDH210.	L+L 3.0 4.0 4.0
CDH220	Prevention of Periodontal Disease	Education and procedures used in the prevention of periodontal disease. Includes soft deposits, calculus and identification of tissue changes as well as characteristics of the most common types of periodontal disease. Also covers oral cancer treatment and use of sickle scalers for performing gross debridement. Coronal polishing also discussed.	Prerequisites: A grade of C or better in CDH205 and CDH210.	L+L 3.0 4.0 4.0
CDH225	Prevention of Oral Cancer	Procedures for screening for oral cancer. Includes oral cancer signs and symptoms as well as identification of abnormal tissues. Also covers the affect of tobacco and alcohol abuse and the design of cessation/reduction plans.	Prerequisites: A grade of C or better in CDH205 and CDH210.	L+L 1.0 1.5 1.5
CDH230	Palliative Care	Patient care and temporization of cavities. Includes procedures for use of temporary/interim restorative materials for single and multiple surface cavities.	Prerequisites: A grade of C or better in CDH215.	L+L 3.0 4.0 4.0

CDH240	Dental Care Finance	Procedures for determining dental care payment eligibility. Covers public financing available to clients as well as non-governmental third party insurance.	Prerequisites: Permission of Department or Division.	LEC 0.5 0.5 0.5
CDH245	Community Dental Health Coordinator Internship	Practical application of the Community Dental Health Coordinator (CDHC) skills in an internship setting. Includes knowledge and skills required to organize, develop and manage integrated dental care in community-based clinics within practice standards.	Prerequisites: Permission of Department or Division.	LAB 3.0 3.0 3.0
CEA101	Cosmetology Concepts and Basic Clinic	Students will be introduced to the basics of cosmetology. Introduction to the Arizona State Board of Cosmetology, safety and sanitation, rules and regulations. Students will begin the basics of fundamental theory of cosmetology in hair cutting, hair coloring, texture services and professional development. Students will be introduced to the concepts of guest services including client consultations, dispensary, laundry and front desk procedures.	Prerequisites: Admission into the Cosmetologist High School program.	388

CEA105	Cosmetology Concepts and Basic Clinic II	Students will continue to develop the basics of fundamental theory of cosmetology in hair cutting, hair coloring, texture services and professional development. Students will continue to develop guest services, client consultations, dispensary, laundry, inventory, and front desk procedures. Students will assist other advanced students on clinic floor and begin to take clients. Students will learn advanced techniques for all color services; to include coloring services, highlighting, foiling, balayage, free painting, ombre, color correction and fashion colors. Students will also learn hair extensions and enhancements. Student will learn advanced techniques for texture services, to include, perming, relaxing, straightening, and natural styling.	Prerequisites: CEA101 or Program Manager's permission.	412
CEA110	Cosmetology Advanced Clinic and Certification Prep	Students will complete a model using the techniques learned thus far and apply them to an editorial project. Students will work with models to complete avant garde looks for hair styling and will learn what job opportunities are available in this career. Students enrolled in this course will apply knowledge of what has been learned in hair styling, chemical services and hair cutting to the public in the clinic. Students will revisit safety and sanitation and Arizona State Board of Cosmetology rules and regulations. State board boot camp will be started in this class. Fundamental nail technology will be covered.	Prerequisites: CEA105 or Program Manager's permission.	388

CEA115	Cosmetology Advanced Clinic and Certification Prep II	Students enrolled in this course will apply knowledge of what has been learned in hair styling, chemical services and hair cutting to the public in the clinic. Students will revisit safety and sanitation and Arizona State Board of Cosmetology rules and regulations. State board boot camp will be completed in this class. Fundamental nail technology course for cosmetology students who are looking to obtain a cosmetology license. State board prep for certification.	Prerequisites: CEA110 or Program Manager's permission.	412
CET102	Surveying II	Surveying principles including triangulation, municipal and land surveys, topographic surveys, earthwork, state plane coordinate systems, stadia methods, practical astronomy, highway curves, superelevations and construction.	Prerequisites: A grade of C or better in CON241 or permission of Department or Division.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
CET103	Construction Methods	Modern construction techniques: planning methods, critical path method (CPM), excavation and earthmoving practices, estimating and work scheduling, concrete design and placement practices. Includes reinforced concrete, prestressed concrete, carpentry, asphalt characteristics, proper proportioning of aggregate and important safety methods. Introduction to heavy construction equipment use	Prerequisites: None.	LEC 3.0 3.0 3.0

CET104	Community Planning and Development	Provides a comprehensive overview of the urban planning and development process. Introduces planning theories, methodologies, and strategies with practical applications from local and other urban communities. Topics include municipal planning, land use and zoning, circulation, water and waste water management, storm drainage and public utility services. Examines the economic development process, environmental and legal issues and focuses on the interdependent nature of development	Prerequisites: None.	LEC 3.0 3.0 3.0
CET105	Highway Technology	Economics of highway locations, rights-of-way, curves, drainage problems, bridge structures, road building equipment, highway financing, and administrative problems at the state, county and city levels	Prerequisites: None.	LEC 3.0 3.0 3.0
CET150	Introduction to Geodesy and Map Projections	Coordinate frames used in geodesy, photogrammetry, surveying, and mapping. Cartesian, spherical, and ellipsoidal coordinates. Introduction to kinematics, gravity field, and size and shape of earth. Positioning in three dimensions. Introduction to map projections and associated coordinate systems. Theory and application of the plane coordinate systems with emphasis on Arizona. Development of projections from Global Positioning System (GPS) observations.	Prerequisites: A grade of C or better in (CET102 and MAT182) or permission of Department or Division.	LEC 3.0 3.0 3.0
CET171	Construction Contracts	Legal aspects of construction contracts, writing and interpretation of specifications, prequalifications, and use of performance bonds	Prerequisites: None.	LEC 3.0 3.0 3.0
CET201	Boundary Control and Legal Principles	Principles of land surveying, boundary controls, ethical and legal principles, and office practices.	Prerequisites: A grade of C or better in CON241 or permission of Department or Division.	LEC 3.0 3.0 3.0



CET202	Writing Legal Descriptions	Application of principles to actual case studies. Emphasis on proper form and clarity in legal description writing. Procedure for filing subdivision plats and preparation for land surveyors' registration examinations.	Prerequisites: A grade of C or better in CON241 or permission of Department or Division.	LEC 3.0 3.0 3.0
CET205	Photogrammetry	An introduction to the study of aerial cameras, equipment, flight procedures, and interpretation of aerial photographs, including stereoscopic principles used in planimetric and topographic maps, map projections, grids, and forms. Practical applications of principles stressed	Prerequisites: A grade of C or better in CET102 or permission of Department or Division.	LEC 3.0 3.0 3.0
CET211	Strength of Materials	A study of strength and application of the materials of engineering construction, including the mechanics of beams, shafts, and bolted and welded connections under various loading conditions.	Prerequisites: A grade of C or better in DFT107 or ELT102 or (MAT151 and MAT182) or MAT187 or equivalent or permission of Department or Division.	LEC 3.0 3.0 3.0
CET241	Fundamentals of Traffic Engineering	Basic study of traffic movement, ordinances, mechanical controls, planning, street and highway design, parking, and traffic engineering organization. Training for personnel as civil engineer technicians.	Prerequisites: None.	LEC 3.0 3.0 3.0
CET250	Public Land Survey System	Overview of unique requirements to determine land boundaries according to the Manual of Instructions for the Survey of Public Lands of the United States, including history of the system, lotted sections, proportioning, subdividing, and evidence analysis. Emphasis on rules in order to perform any boundary survey, particularly for Arizona	Prerequisites: A grade of C or better in CET102 and CET201.	LEC 3.0 3.0 3.0

CET257	Route and Construction Surveying	Principles and field practice of route and construction surveying, including route control surveys, construction control, topographic mapping, highway curves, and computations for roadways, utilities, bridges, buildings, small commercial sites, and subdivisions	Prerequisites: A grade of C or better in CET102 or permission of Department or Division.	L+L 3.0 5.0 5.0
CET296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
CET296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

CET296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
CET296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
CET298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

CET298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CET298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CFS101AH	Art Activities for the Young Child	The creative use of art media and techniques at appropriate developmental levels.	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS101AJ	Music Activities for the Young Child	Experiences with music in singing, rhythm instruments, creative movements, and games, as well as the development of music appreciation and basic listening skills	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS101AP	Science Activities for the Young Child	Interpreting the study of science in early childhood education as a part of a dynamic growth process offered by the child's daily life experiences	Prerequisites: None.	LEC 1.0 1.0 1.0

CFS101AR	Learning With Toys	Use of creative imagination with toys to enable the child alone or with others to explore the world. Includes evaluating proper use of toys and appropriate developmental skills	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS105	Personal and Family Role Development	Basic principles of self-esteem, assertiveness training, decision-making and problem-solving as related to parents' roles in the family unit	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS106	Stress Management in the Family	Impact of stress factors on the family. Managing time and stress in the home. Options for coping with anxiety	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS107	Men and Children: Strengthening the Bond	Overview of the relationship between fathers or significant male figures and children from the role perspective of the involved, nurturing male. Strategies for assessing and organizing successful male involvement programs examined	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS109	Parent/Child Communication	Communication between parents and children. Developing self-esteem, responsibility and empathic listening. Pitfalls to communication	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS111	Relationships to Promote Learning in Young Children: Birth to Age Three	Overview of the relationship between the teacher/caregiver and child from the perspective of a reflective teacher. Students will learn the importance of assessing, understanding, and enhancing the development of emotional skills of young children to help guide and develop a child's self-image. Student will also be able to monitor, reflect, and plan self-care so they become effective teachers.	Prerequisites: None. CFS/ECH176 recommended.	LEC 1.0 1.0 1.0
CFS112	Personal Growth and Family Relations	Personal development as related to the individual, the family, and their relations. Emphasis on interpersonal family relationships. Skills and techniques to facilitate and strengthen the individual and family relationships	Prerequisites: None.	LEC 3.0 3.0 3.0

CFS114	Working with the Hyperactive Child	Causes of hyperactivity in children; focus on the family's role in identification, treatment and school/community support	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS116	Discipline and Guidance	Age appropriate principles for disciplining and guiding young children's behavior in child care settings, including interpersonal and environmental strategies. Observational opportunities provided	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS120	Contemporary Issues In Early Childhood	Designed to develop understanding of a broad range of contemporary issues that impact the child in today's society. Course directed at pre-service and in-service professionals.	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS121AA	Single Parent Family-Adjustment	Overview of issues facing single parent families. Examination of adjustment issues with emphasis on relationships. Methods of adapting family life to meet the needs and variations of one-parent families	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS123	Health and Nutrition In Early Childhood Settings	Creating and maintaining healthy environments and practices in programs serving young children. Emphasis on assessing the child's health status, nutrition and food service, communicable disease recognition, transmission, and prevention, infection control, regulations and regulatory agencies, current topics, resources, and innovative practices	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS125	Safety in Early Childhood Settings	Fundamental concepts of promoting a safe, but challenging learning environments. Establishing and maintaining safety procedures in the early childhood setting. Emphasis on indoor and outdoor equipment and activities, risk analysis, accident, evacuation, and emergency plans, regulations, regulatory agencies and resources, current topics, and innovative practices	Prerequisites: None.	LEC 1.0 1.0 1.0

CFS130	Demystifying Adolescence	A holistic overview of the physical, social, and emotional development of adolescents. Emphasis on effective skills necessary for working with adolescents and their families.	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS140	Special Topics: Child and Family Studies	Explores special topics related to child and family studies. Topics vary and include concepts relevant to those pursuing careers in or employed in early childhood care or to those working with families in programs, agencies, organizations, and resource centers that provide services to families.	Prerequisites: None.	LEC 0.5 0.5 0.5
CFS157	Marriage and Family Life	Study of marriage and the family as a social system, including models of family analysis, intra- and interpersonal relations, and cross-cultural and historical patterns	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS159	The Modern Family	An examination of the modern American family. Special emphasis on the changing functions and roles of individuals within today's society and an analysis of the basic problems confronting the family, including alternative family styles	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS160	Using Music, Speech, and Movement with Children's Literature	Using elements of music, speech, and movement with children's literature, including rhymes, chants, songs, and books to enhance children's social, physical, cognitive, and emotional development	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS163	Family Child Care: Introduction to Business Management	Emphasis on small business management and effective policies and procedures for family child care providers. Licensing, legal, and regulatory issues in a home setting are examined	Prerequisites: None.	LEC 3.0 3.0 3.0

CFS164	Family Child Care: Curriculum and Environment	Family child care planning for multi-age groupings of children through age eight. Role of the environment as well as various curriculum programs will be explored and evaluated. Exploration of culturally rich, inclusive and child-centered environment in his/her own child care setting. Issues of professionalism, family partnerships, observation, guidance, and health/safety practices are examined	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS164AA	Family Child Care: The Environment	Family child care environments for multi-age groupings of children through age eight. Exploration of culturally rich, inclusive, and child-centered environment in his/her own child care setting. Issues of health/safety practices are examined	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS164AB	Family Child Care: Programming, Guidance and Observation	Family child care programming for multi-age groupings of children through age eight. Various curriculum programs will be explored and evaluated. Issues of observation and guidance are examined	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS164AC	Family Child Care: Family Partnerships and Professionalism	Issues of professionalism, family partnerships, communication, and ethical practices are examined	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS167	School-Age Child Care Provider	Issues related to school-age child care. Past, current, and future trends; regulations, insurance liabilities and coverage, shared facilities, and community resources. Techniques for managing/administering services and personnel, communicating with parents, and evaluating the care/program. Planning and scheduling the school-age program. Includes overview of child growth and development, types of routines and activity schedules.	Prerequisites: None.	LEC 3.0 3.0 3.0



CFS176	Child Development	Study of the science of human development from conception through adolescence. Includes observation skills, parent and adult roles in the lives of children, and contemporary issues	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS177	Parent-Child Interaction	Positive methods to strengthen relationships and resolve conflicts with children. Focus on effective interpersonal skills and guidance techniques	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS178	Survey of Early Childhood Education	Orientation to basic concepts of day care and nursery programs. History and philosophy of child care services including state regulations governing those services. Observation opportunities provided	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS179	Child Care: A Multifaceted Career	Overview of the child care field. Focus on enhancing children's self esteem, providing for children's nutritional needs, and developing adequate safety and sanitation practices	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS181	Enhancing Infant and Toddler Development	Principles of development in children from birth through 30 months. Emphasis on individuality of child and the adult role in providing a safe and stimulating environment for the development of the child	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS182	Parenting the Early Adolescent: Ages Ten to Fourteen	Emphasis on the early adolescent developmental period, ages ten to fourteen, and the importance of the parent-child relationship, as well as strategies to ensure successful teen years	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS183	Contemporary Issues in Adolescence	Current issues that impact adolescent development and behavior explored. Comprehensive and specific strategies for addressing these issues as parents or professionals working with teens emphasized. Issues related to adolescent sexuality, abuse, mental health, violence, and risk behaviors included	Prerequisites: None.	LEC 3.0 3.0 3.0

CFS190	Home-Based Visitation	Emphasis on development of skills needed to successfully complete home-based client visitation. Opportunities for field-based observations provided. .	Prerequisites: None.	L+L 3.0 4.0 4.0
CFS192	Child Care Center Staff Development	Presents strategies to administrators and supervisors in child care centers for developing the personal and professional growth of child care staff	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS193	Financial Management in Child Care Centers	Provides strategies for financial management and administration of finances in a child care center. Specific concerns of participants addressed	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS194AA	Early Childhood Program Management: Staffing and Managing	Methods and techniques for recruiting, staffing, and managing in early childhood programs	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS194AB	Early Childhood Program Management: Human Relations	Basic human relations in early childhood organizations and the influence of the individual's personal needs on the overall needs and objectives of the organization	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS194AC	Early Childhood Program Management: Organizational Structure	Provides a broad perspective of the organizational life of an early childhood environment	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS195	Early Childhood Personnel Supervision	Covers supervision concepts and applications for early childhood programs	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS196	Ethics and the Early Childhood Educator	Ethical issues in the early childhood field	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS197	Leadership in Early Childhood Education	Provides concepts for understanding and managing leadership roles and responsibilities in the early childhood field	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS204	Reflective Supervision	Reflective supervisory processes to enhance learning and professional development. Includes professional development stages to provide supervisors with tools to support professional growth. Also covers challenges and barriers to the supervisor and employee/practitioner relationship.	Prerequisites: None.	LEC 1.0 1.0 1.0

CFS205	Human Development	Explores the growth and development process over the human life span. Research and theoretical approaches; physical, cognitive, social, and personality development from birth through adulthood and death	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS206	Child and Family Organizations: Management and Administration	Examination of management and administration of community- based child and family organizations within the context of organizational behaviors. Focus on attributes of effective organizations: the impact of organizational culture and learning, work-place diversity and employee motivation	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS207	Organization and Community Leadership in Child and Family Organizations	Examination of organization and community leadership as it applies to the management and administration of community- based child and family services organizations. Provides overview of leadership styles and function	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS208	Child and Family Organizations: Fiscal Management and Grant Writing	Examination of fiscal accountability and resource development as it applies to the management and administration of community-based child and family social service organizations. Provides overview of grant development processes beginning with research into governmental and private funding sources through fiscal and grant audit processes. Includes budget development, risk management, and cost control issues	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS209	Child and Family Organizations: Project Management	Focuses on concepts and strategies associated with effective project management in community-based child and family organizations. Emphasis on planning, evaluation and project management models	Prerequisites: None.	LEC 3.0 3.0 3.0

CFS210	Family Life Education	Provides an overview of the professional work within the field of family life education. Emphasis on developing flexible, culturally sensitive and effective professional skills	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS220	Introduction to Parenting and Family Development	Overview of the field of family and parent development. Focuses on parenthood as a developmental process and cultural influences on child rearing. A family systems perspective introduced and applied to understanding families with children	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS225	Foundations of Parent Education	Professional development as related to work with parents. Emphasis on developing effective skills with parents, professionals and paraprofessionals involved with the child. Skills and techniques to facilitate and strengthen the individual and family relationships.	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS235	Developing Child: Theory into Practice, Prenatal to Age Eight	Understanding and working with young children, birth through age eight. Analysis of young children's physical, social, emotional, cognitive and linguistic development within their home, school, and cultural contexts. Typical and atypical development. Implications for teachers and parents. Emphasis on observations and planning curriculum based on theories, research, and child-specific data	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS240	Human Behavior in Context	Considers the influences of physical and social environments in which human behavior occurs. Includes multiple roles and perspectives of the individual, the family, society and the professional	Prerequisites: None.	LEC 3.0 3.0 3.0

CFS242	Curriculum Planning for Diversity	Practical early childhood classroom applications for a diverse population, including integration of cultures, generations, genders, and races into the classroom, facilitation of second language acquisition, and practical teaching strategies which are also developmentally appropriate.	Prerequisites: A grade of C or better in CFS/ECH176.	LEC 3.0 3.0 3.0
CFS243	Cross-Cultural Parenting	Focus on the study of parents and children from a cross-cultural position. Emphasis on parenting styles and practices from a cultural directive and expectation perspective. Course designed for those seeking careers in Family Studies, Parent Education, Psychology, Social Work/Human Services	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS247	Family Ties and Aging	Identification and examination of facets of family relationships and aging. Emphasis on study of central family connections for older people, unique family situations, and implications of family transitions. Course designed for those seeking careers in Family Studies, Parent Education, Psychology, Social Work/Human Services	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS249	Transition to Adulthood	Emphasis on major elements of the transition to adulthood and key links to changes in family relationships. Focus on the realignment of intergenerational relationships and reassessment of family priorities. Course designed for those seeking careers in Family Studies, Parent Education, Psychology, Social Work/Human Services	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS250	Social Policy and Families	Examines the impact of social policy on family systems and the implications for professional roles and practice	Prerequisites: None.	LEC 3.0 3.0 3.0

CFS251	Transitions: Work to Retirement	Explores the work to retirement transitional issues that impact individuals and families. Emphasis on physical, cognitive and psychosocial dimensions of retirement	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS252	Contemporary Issues in Aging	Current issues that impact aging development and behavior explored. Comprehensive and specific strategies for addressing these issues for professionals working with aging adults emphasized	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS256	Management in the Family	Management as a means to the realization of individual and family values and goals; creation, allocation, and use of resources. Focus on decision making	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS257	Working with Families with Diverse Needs	A collaborative approach to working with families with diverse needs. Examines the effect of specific challenges on the family system. Presents techniques for those working with families to facilitate stress management, conflict resolution, and utilization of community and personal resources to aid in the strengthening of the family unit	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS258	Families in Society	Areas of concentration include family transition, diversity in structure and culture faced by contemporary families, problems, crisis and change affecting the stress on families as our society progresses into a more complicated future. The study of change as an integral part of all family's day-to-day experiences while recognizing that family ancestral and cultural dimensions are fundamental for all family groupings. Course designed for those seeking careers in Family Studies, Parent Education, Psychology, Social Work/Human Services	Prerequisites: A grade of C or better in CFS157 and CFS259 or permission of Instructor.	LEC 3.0 3.0 3.0

CFS259	Sexuality over the Life Span	Examination of the physical, psychological, social, and cultural contributions to human sexuality. Emphasis on family life and cultural variation. Examination of facts and myths, current literature, and changing mores regarding human sexuality. Sexuality of males and females in contemporary society; impact of sexual trends on society; home/school issues in sexuality education.	Prerequisites: Permission of Department or Division. Student must be 18 years or older.	LEC 3.0 3.0 3.0
CFS263	Child and Family Studies Seminar	Classroom portion of Child and Family Studies Internship. Emphasizes the blend of job-related activities including career exploration, employment procedures, human relations, and on-the-job problems.	Prerequisites: Permission of Department or Division. Corequisites: CFS264AA or CFS264AB or CFS264AC initial enrollment in internship module.	LEC 1.0 1.0 1.0
CFS264AA	Child and Family Studies Internship	Laboratory portion of Child and Family Studies Seminar. Five hours of work weekly. Supervision and evaluation by a coordinator.	Prerequisites: Permission of Department or Division. Corequisites: CFS263 when initially enrolled in CFS264AA or CFS264AB or CFS264AC module.	LAB 1.0 5.0 0.0
CFS264AB	Child and Family Studies Internship	Laboratory portion of Child and Family Studies Seminar. Ten hours of work weekly. Supervision and evaluation by a coordinator.	Prerequisites: Permission of Department or Division. Corequisites: CFS263 when initially enrolled in CFS264AA or CFS264AB or CFS264AC module.	LAB 2.0 10.0 0.0
CFS264AC	Child and Family Studies Internship	Laboratory portion of Child and Family Studies Seminar. Fifteen hours of work weekly. Supervision and evaluation by a coordinator.	Prerequisites: Permission of Department or Division. Corequisites: CFS263 when initially enrolled in CFS264AA or CFS264AB or CFS264AC module.	LAB 3.0 15.0 0.0
CFS269	Child Care Seminar	Emphasizes the blend of job-related activities including career exploration, employment procedures, human relations, and on-the-job issues.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0

CFS271	Arranging the Environment	Exploration of the influence of the environment on the behavior of young children. Indoor and outdoor spaces considered and analysis of environments practiced.	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS273	Math for the Young Child	Methods and techniques for encouraging the beginnings of mathematical/logical thought with young children. Focus upon the theory of Jean Piaget.	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS275	Literacy Development and the Young Child	Literacy from birth through the early childhood years. Focus on developmentally appropriate ways to encourage speaking, listening, writing, and reading in the home and classroom.	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS277	Adult-Adolescent Interaction	Prepares social service workers, teachers, and parents to interact effectively with teenagers. Develops understanding of the interaction between adolescents and their families. Teaches practical strategies to deal with specific problem areas	Prerequisites: None.	LEC 3.0 3.0 3.0
CFS281	Adolescent School Success	An overview of factors that contribute to adolescent school success, including family-school interactions, special needs adolescents, and problem areas. Emphasis on strategies and resources to facilitate school success	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS282	Mainstreaming The Young Child with A Disability	An exploration of the educational, social, and behavioral issues and concerns involved in the successful integration of children with disabilities into typical preschool classes. Includes discussion of practical concerns such as adaptation of environment and accessing existing resources in the community	Prerequisites: None.	LEC 1.0 1.0 1.0



CFS283	Multicultural Early Child Education	Practical early childhood classroom applications for a diverse ethnic population, including integration of multicultures into the classroom, facilitation of second language acquisition, and practical teaching strategies which are also developmentally appropriate	Prerequisites: A grade of C or better in CFS/ECH176.	LEC 1.0 1.0 1.0
CFS284AA	Early Childhood Teaching Internship	Work experience in child care centers. 80 hours of designated work per credit. Maximum of 6 credits allowed.	Prerequisites: A grade of C or better in CFS/ECH176 and permission of department. Corequisites: CFS/ECH269.	L+L 2.0 2.0 2.0
CFS284AB	Early Childhood Teaching Internship	Work experience in child care centers. 80 hours of designated work per credit. Maximum of 6 credits allowed.	Prerequisites: A grade of C or better in CFS/ECH176 and permission of Department Corequisites: CFS/ECH269.	L+L 3.0 3.0 3.0
CFS285	Family-School Interaction	Interaction among parents, teachers and the school. Emphasis on methods used cooperatively by parents and teachers to provide for education and developmental needs.	Prerequisites: A grade of C or better in CFS/ECH176 or CFS278 or permission of Instructor.	LEC 3.0 3.0 3.0
CFS285AA	Family-School Interaction: Preschool	Interaction among parents, teachers and the preschool. Emphasis on methods used cooperatively by parents and preschool teachers to provide for education and developmental needs.	Prerequisites: A grade of C or better in CFS/ECH176 or CFS278 or permission of Instructor.	LEC 1.0 1.0 1.0
CFS287	Professional Development in Early Childhood Education	Emerging professionalism within the field of early childhood education. Consideration of job responsibilities, rewards, ethics and current issues facing practitioners. Includes assessment and career planning.	Prerequisites: None.	LEC 1.0 1.0 1.0
CFS290AA	Child Abuse: Identification and Reporting in Child Care Settings	Identification, recording, and reporting by child care providers of sexual abuse, physical abuse, or neglect of young children	Prerequisites: None.	LEC 1.0 1.0 1.0

CHA104	Community Health Work	Preparation of Community Health workers for outreach health prevention, advocacy, education, referral, and intervention working with individuals, communities and families. Includes history of community health work programs, community systems, and resources for clients and families often in disparity.	Prerequisites: None.	LEC 3.0 3.0 3.0
CHI101	Elementary Chinese (Mandarin) I	Introduction to the basic grammar, pronunciation and vocabulary of the Mandarin Chinese language. Includes the study of Chinese culture, practice of listening, speaking, reading, and writing skills	Prerequisites: None.	L+L 5.0 6.0 6.0
CHI102	Elementary Chinese (Mandarin) II	Study of grammar and vocabulary along with the study of Chinese culture. Emphasis on pronunciation and speaking skills.	Prerequisites: A grade of C or better in CHI101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 6.0 6.0
CHI115	Beginning Chinese Conversation I	Introduction to Chinese sound system, basic grammar, and vocabulary necessary to develop speaking ability in Mandarin Chinese. Designed for students seeking speaking and listening ability with little emphasis on writing and reading Chinese characters	Prerequisites: None.	LEC 3.0 3.0 3.0
CHI116	Beginning Chinese Conversation II	Continued development of speaking and listening skills for effective communication in Mandarin Chinese. Includes elements of Chinese culture	Prerequisites: A grade of C or better in CHI115 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
CHI201	Intermediate Chinese I	Continued development of speaking, reading, and writing proficiency in Mandarin Chinese through building vocabulary, phrases, idioms, and grammatical patterns. Includes study of Chinese culture	Prerequisites: A grade of C or better in CHI102 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 6.0 6.0

CHI202	Intermediate Chinese II	Advanced development of speaking, reading, and writing skills in Mandarin Chinese, and continued exploration of Chinese culture	Prerequisites: A grade of C or better in CHI201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 6.0 6.0
CHI225	Intermediate Chinese Conversation I	Continued development of oral and aural skills for effective communication in Mandarin Chinese	Prerequisites: A grade of C or better in CHI116 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
CHI226	Intermediate Chinese Conversation II	A continuation of conversational skills for effective communication in Mandarin Chinese	Prerequisites: A grade of C or better in CHI225 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
CHI296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
CHI296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

CHI296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
CHI296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
CHI298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

CHI298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CHI298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CHM090	Preparation for Fundamental Chemistry	A developmental course designed to review basic math and chemistry principles for students deficient or insecure in these areas. Stresses individualized instruction and "hands-on" experience. Serves to prepare the student for CHM130	Prerequisites: None.	LEC 1.0 1.0 1.0
CHM091	Preparatory Chemistry	Review of basic concepts of chemistry emphasized in non- degree biology courses. Concepts of matter, energy, and chemical characteristics of atoms. Structure and function of inorganic and organic molecules	Prerequisites: None.	LEC 0.5 0.5 0.5

CHM095	Review of General Chemistry I	A brief review of General Chemistry I concepts and problem-solving techniques most directly applicable to General Chemistry II or General Chemistry II with Qualitative Analysis topics.	Prerequisites: A grade of C or better in CHM151 and (MAT120 or MAT121 or MAT122 or an equivalent Intermediate Algebra course or satisfactory score on placement exam), or permission of Instructor, or Department or Division Chair.	LEC 1.0 1.0 1.0
CHM107	Chemistry and Society	A survey of chemistry and its impact on the environment. Completion of CHM107LL required to meet the Natural Science requirement.	Prerequisites: None.	LEC 3.0 3.0 3.0
CHM107LL	Chemistry and Society Laboratory	Laboratory experience in support of CHM107.	Prerequisites: A grade of C or better in CHM107 or Corequisites: CHM107.	LAB 1.0 3.0 3.0
CHM130	Fundamental Chemistry	A survey of the fundamentals of general chemistry. Emphasis on essential concepts and problem solving techniques. Basic principles of measurement, chemical bonding, structure and reactions, nomenclature, and the chemistry of acids and bases. Preparation for students taking more advanced courses in chemistry. Designed to meet needs of students in such diverse areas as agriculture, nursing, home economics, physical education and water technology.	Prerequisites: A grade of C or better in (CHM090 or MAT090 or MAT091 or MAT092 or higher level mathematics course or satisfactory math placement) and (RDG100 or higher or eligibility for CRE101 or RDG100LL as indicated by appropriate reading placement), or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM130AA	Fundamental Chemistry with Lab	A survey of the fundamentals of general chemistry. Emphasis on essential concepts and problem solving techniques. Basic principles of measurement, chemical bonding, structure and reactions, nomenclature, and the chemistry of acids and bases. Preparation for students taking more advanced courses in chemistry. Designed to meet needs of students in such diverse areas as agriculture, nursing, home economics, physical education and water technology.	Prerequisites: A grade of C or better in [CHM090 or MAT090 or MAT091 or MAT092 or (MAT103AA and MAT103AB) or higher level mathematics course or satisfactory score on math placement exam] and [RDG100 or RDG100LL or higher or eligibility for CRE101 as indicated by appropriate reading placement test score], or permission of the Instructor, or Department or Division Chair.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

CHM130LL	Fundamental Chemistry Laboratory	Laboratory experience in support of CHM130.	Prerequisites: A grade of C or better in CHM130 or Corequisites: CHM130.	LAB 1.0 3.0 3.0
CHM138	Chemistry for Allied Health	Elements of fundamental and organic chemistry. Includes the general chemical behavior of inorganic matter and the structure of organic and biochemical systems. Course designed for specific allied health programs at MCCD. May not be applicable to other allied health programs or transferable.	Prerequisites: A grade of C or better in [CHM090 or MAT090 or MAT091 or MAT092 or (MAT103AA and MAT103AB) or higher or satisfactory score on math placement exam], or one year of high school chemistry taken within the last five years with a grade of C or better, or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM138LL	Chemistry for Allied Health Laboratory	Laboratory experience in support of CHM138, Chemistry for Allied Health.	Prerequisites: None. Corequisites: CHM138.	LAB 1.0 3.0 3.0
CHM150	General Chemistry I	Detailed study of principles of chemistry for science majors and students in pre-professional curricula.	Prerequisites: A grade of C or better in [(CHM130 and CHM130LL), or CHM130AA, or one year of high school chemistry taken within the last five years] and (a grade of C or better in MAT151 or higher level mathematics course, or satisfactory score on placement exam), or permission of the Instructor, or Department or Division Chair.	LEC 4.0 4.0 4.0
CHM150AA	General Chemistry I	Detailed study of principles of chemistry for science majors and students in pre-professional curricula.	Prerequisites: A grade of C or better in [(CHM130 and CHM130LL), or CHM130AA, or one year of high school chemistry with a grade of C or better taken within the last five years] and [a grade of C or better in MAT151 or higher level mathematics course, or satisfactory score on placement exam], or permission of the Instructor, or Department or Division Chair.	LEC 5.0 4.0 4.0 LAB 0.0 3.0 3.0

CHM151	General Chemistry I	Detailed study of principles of chemistry for science majors and students in pre-professional curricula.	Prerequisites: A grade of C or better in [(CHM130 and CHM130LL), or CHM130AA, or one year of high school chemistry with a grade of C or better taken within the last five years] and [a grade of C or better in MAT151 or higher level mathematics course, or satisfactory score on placement exam], or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM151AA	General Chemistry I	Detailed study of principles of chemistry for science majors and students in pre-professional curricula.	Prerequisites: A grade of C or better in [(CHM130 and CHM130LL), or CHM130AA, or one year of high school chemistry with a grade of C or better taken within the last five years], and [a grade of C or better in MAT151 or higher level mathematics course, or satisfactory score on placement exam], or permission of the Instructor, or Department or Division Chair.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
CHM151LL	General Chemistry I Laboratory	Laboratory experience in support of CHM150 or CHM151. Course Attribute(s): General Education Designation: Natural Sciences (Quantitative) - [SQ] in combination with: CHM150 or CHM151 Arizona Shared Unique Number SUN#: CHM 1151	Prerequisites: A grade of C or better in CHM150 or CHM151 or Corequisites: CHM150 or CHM151.	LAB 1.0 3.0 3.0
CHM152	General Chemistry II	A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics.	Prerequisites: A grade of C or better in [(CHM150 or CHM151) and CHM151LL], or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0



CHM152AA	General Chemistry II	A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics.	Prerequisites: A grade of C or better in [(CHM150 or CHM151) and CHM151LL], or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
CHM152LL	General Chemistry II Laboratory	Laboratory experience in support of CHM152.	Prerequisites: A grade of C or better in CHM152 or Corequisites: CHM152.	LAB 1.0 3.0 3.0
CHM154	General Chemistry II with Qualitative Analysis	A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, kinetics, electrochemistry, and other selected topics. Includes qualitative analysis. Prepares students for all sophomore chemistry courses.	Prerequisites: A grade of C or better in [(CHM150 or CHM151) and CHM151LL] or CHM150AA, or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM154LL	General Chemistry II with Qualitative Laboratory	Laboratory experience in support of CHM154. Includes qualitative analysis.	Prerequisites: A grade of C or better in CHM154 or Corequisites: CHM154.	LAB 2.0 6.0 6.0
CHM195AA	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in CHM151 or permission of Instructor.	L+L 1.0 2.0 2.0

CHM195AB	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in CHM151 or permission of Instructor.	L+L 2.0 4.0 4.0
CHM195AC	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in CHM151 or permission of Instructor.	L+L 3.0 6.0 6.0
CHM220	Analytical Chemistry	Principles and methods of chemical analysis	Prerequisites: A grade of C or better in CHM152 and CHM152LL or CHM154 and CHM154LL.	LEC 3.0 3.0 3.0
CHM220LL	Analytical Chemistry Laboratory	Laboratory experience in support of CHM220	Prerequisites: A grade of C or better in CHM152LL or CHM154LL or equivalent or Corequisites: CHM220.	LAB 2.0 6.0 6.0
CHM230	Fundamental Organic Chemistry	Chemistry of representative groups of organic compounds, emphasizing biological applications.	Prerequisites: A grade of C or better in (CHM130 and CHM130LL) or (CHM150 or CHM151 and CHM151LL), or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0

CHM230LL	Fundamental Organic Chemistry Laboratory	Laboratory experience in support of CHM230	Prerequisites: A grade of C or better in CHM130LL or CHM151LL or equivalent or Corequisites: CHM230.	LAB 1.0 3.0 3.0
CHM235	General Organic Chemistry I	Rigorous introduction to chemistry of carbon-containing compounds. Reaction mechanisms and recent methods of synthesis emphasized.	Prerequisites: A grade of C or better in (CHM152 and CHM152LL), or CHM152AA, or (CHM154 and CHM154LL), or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM235AA	General Organic Chemistry I with Lab	Rigorous introduction to chemistry of carbon-containing compounds. Reaction mechanisms and recent methods of synthesis emphasized.	Prerequisites: A grade of C or better in (CHM152 and CHM152LL), or CHM152AA, or (CHM154 and CHM154LL), or permission of the Instructor, or Department or Division Chair.	LEC 4.0 3.0 3.0 LAB 0.0 4.0 4.0
CHM235LL	General Organic Chemistry I Laboratory	Laboratory experience in support of CHM235.	Prerequisites: A grade of C or better in CHM235 or Corequisites: CHM235. Completion of prerequisites within the last two years recommended.	LAB 1.0 4.0 4.0
CHM236	General Organic Chemistry IIA	Study of chemistry of carbon-containing compounds continued. Structural determination and additional reaction mechanisms and modern methods of synthesis emphasized.	Prerequisites: A grade of C or better in CHM235 and CHM235LL, or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM236AA	General Organic Chemistry IIA with Lab	Study of chemistry of carbon-containing compounds continued. Structural determination and additional reaction mechanisms and modern methods of synthesis emphasized.	Prerequisites: A grade of C or better in (CHM235 and CHM235LL) or CHM235AA, or permission of the Instructor, or Department or Division Chair.	LEC 4.0 3.0 3.0 LAB 0.0 4.0 4.0
CHM236LL	General Organic Chemistry IIA Laboratory	Laboratory experience in support of CHM236.	Prerequisites: A grade of C or better in CHM236 or Corequisites: CHM236. Completion of prerequisites within the last two years recommended.	LAB 1.0 4.0 4.0

CHM238	General Organic Chemistry IIB	Alternate to CHM236. Study of chemistry of carbon-containing compounds continued. Structural determination and additional reaction mechanisms and modern methods of synthesis emphasized.	Prerequisites: A grade of C or better in CHM235 and CHM235LL, or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM238LL	General Organic Chemistry IIB Laboratory	Laboratory experience in support of CHM238	Prerequisites: A grade of C or better in CHM235LL or equivalent or Corequisites: CHM238.	LAB 2.0 6.0 6.0
CHM260	Fundamental Biochemistry	Structures, properties, and functions of proteins, enzymes, nucleic acids, carbohydrates and lipids; the utilization and synthesis of these materials by living systems and the relationship of the processes to energy production and utilization.	Prerequisites: A grade of C or better in (CHM230 and CHM230LL) or (CHM235 and CHM235LL), or permission of the Instructor, or Department or Division Chair.	LEC 3.0 3.0 3.0
CHM260LL	Fundamental Biochemistry Laboratory	Laboratory experience in support of CHM260.	Prerequisites: A grade of C or better in CHM260 or Corequisites: CHM260. Completion of prerequisites within the last two years recommended.	LAB 1.0 3.0 3.0
CHM282AA	Service-Learning Experience in Chemistry	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
CHM282AB	Service-Learning Experience in Chemistry	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
CHM282AC	Service-Learning Experience in Chemistry	Unpaid Service-Learning experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

CHM296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
CHM296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
CHM296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

CHM296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
CHM298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CHM298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

CHM298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CIS100	Internet: A Tool for Learning	Use of the Internet to promote learning. Focus on Internet services and access. Information provided on browsing, Internet addresses, naming conventions, search concepts and techniques, using bookmarks and capturing information	Prerequisites: None.	L+L 0.5 0.5 0.5
CIS102	Interpersonal and Customer Service Skills for IT Professionals	Examines behaviors necessary to develop and support an effective client service organization. Focuses on methods of increasing the effectiveness of help-desk professionals when responding to a range of customer conditions	Prerequisites: None.	LEC 1.0 1.0 1.0
CIS102DA	Customer User Support	Examines skills, tools and strategies necessary for becoming a computer help-desk or end-user support professional.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS103	Introduction to Social Media	Identify and explain social media and Web 2.0 technologies for personal, academic, professional, and business applications. Create and maintain accounts on various sites to socialize, write, and share multimedia, while understanding the related ethics, privacy and security issues.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS104	Introduction to Academic and Internship Programs	An overview of college orientation and academic planning, with an emphasis on the use of academic course work and career planning to develop a successful internship experience.	Prerequisites: None.	LEC 1.0 1.0 1.0

CIS105	Survey of Computer Information Systems	Overview of computer technology, concepts, terminology, and the role of computers in business and society. Discussion of social and ethical issues related to computers. Use of word processing, spreadsheet, database, and presentation software. Includes uses of application software and the Internet for efficient and effective problem solving. Exploration of relevant emerging technologies.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS107	The Electronic Game Industry	Introduction to the electronic game industry, including history, market, distribution and publishing channels, business models, team roles, and career landscape. Technical topics covered include software engineering, artificial intelligence, game physics, computer graphics, and networking.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS108	Electronic Portfolio Development	Compile, reflect on, and select prior learning experiences and artifacts. Design, produce, and publish an online portfolio that documents prior learning. Includes techniques for presenting the electronic portfolio for evaluation.	Prerequisites: A grade of C or better in (CIS105 or BPC110) or permission of Instructor.	L+L 1.0 2.0 2.0
CIS109AM	Networking Technology I	Computer networking basics. Network services, transmission media, and connectivity devices covered. Open Systems Interconnection (OSI) Reference Model	Prerequisites: None.	LEC 2.0 2.0 2.0



CIS111	Ethics in Information Technology	Ethical issues that arise as a result of increasing use of computers, and the responsibilities of those who work with computers, either as computer science professionals or end users. Critical inquiry and review of ethical challenges in information technology business, including professional and corporate responsibility, government regulation, fiduciary responsibilities of information, infringement of intellectual property, security risk assessment, Internet crime, identity theft, employee surveillance, privacy, compliance, social networking, and the ethics of IT corporations.	Prerequisites: None.	LEC 3.0 3.0 3.0
CIS113AE	Microsoft Word: Word Processing Level I	Using word processing software to create, name and manage files, edit text, and do basic formatting of documents.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS113BE	Microsoft Word: Word Processing Level II	Using more advanced features of word processing software to format documents, create lists, mail-merged documents, and documents with themes and styles.	Prerequisites: A grade of C or better in CIS113AE or permission of Instructor.	L+L 1.0 1.0 1.0
CIS113CE	Microsoft Word: Word Processing Level III	Utilizing more advanced features of word processing software to incorporate style and theme elements, use desktop publishing capabilities, and insert tables.	Prerequisites: A grade of C or better in CIS113BE or permission of Instructor.	L+L 1.0 1.0 1.0
CIS113DE	Microsoft Word: Word Processing	Using word processing software to create, name and manage files, edit text, format, apply themes and styles, create and modify tables, apply desktop publishing features, and print a variety of types of documents.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS114AE	Excel: Level I	Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, and projections.	Prerequisites: None.	L+L 1.0 2.0 2.0

CIS114BE	Excel: Level II	Additional Excel spreadsheet techniques, including macro programming, database searching, extraction, and linking to obtain prescribed reports and graphs.	Prerequisites: A grade of C or better in CIS114AE or permission of Instructor.	L+L 1.0 1.0 1.0
CIS114CE	Excel: Level III	Additional Excel spreadsheet techniques, including complex macros, statistics, and matrix manipulation. Project design using multiple, integrated spreadsheets	Prerequisites: A grade of C or better in CIS114BE or permission of Instructor.	LEC 1.0 1.0 1.0
CIS114DE	Excel Spreadsheet	Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, projections, macro programming, database searching, extraction, linking, statistics, and matrix manipulation. Production of graphs and reports. Project design using multiple, integrated spreadsheets.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS116	Computer Graphics: Introduction to Microsoft Visio	Introduction to use of Visio graphics software to create and edit drawings using predefined shapes and templates. Use of Visio tools to create simple drawings with text, symbols and labels.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS117AM	Database Management: Microsoft Access - Level I	Introduction to the basic elements of a current version of the Microsoft Access database management program, for casual and beginning users.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS117BM	Database Management: Microsoft Access - Level II	Exploration of additional components of the Microsoft Access database management program.	Prerequisites: A grade of C or better in CIS117AM or permission of Instructor.	L+L 1.0 1.0 1.0
CIS117CM	Database Management: Microsoft Access - Level III	Application of the features of the Microsoft Access program to some common database management problems	Prerequisites: A grade of C or better in CIS117BM.	L+L 1.0 1.0 1.0
CIS117DM	Microsoft Access: Database Management	Introduction to the basic elements, exploration of additional components and common database management problems related to the Microsoft Access program.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS118AB	PowerPoint: Level I	Use of PowerPoint software to produce professional-quality presentation visuals	Prerequisites: None.	L+L 1.0 2.0 2.0

CIS118BB	PowerPoint: Level II	Use of PowerPoint software to add movement and sound to desktop presentations to enhance audience attention.	Prerequisites: A grade of C or better in CIS118AB.	L+L 1.0 1.0 1.0
CIS118DB	Desktop Presentation: PowerPoint	Use of PowerPoint to produce professional-quality presentation visuals with animation and sound.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS119DO	Introduction to Oracle: SQL	Use of Oracle tools and methodologies to fulfill real-world business information requirements. Hands-on exercises for designing, creating, and maintaining database structures to store, retrieve, update, and display data in a relational database using the SQL programming language. Creating and maintaining database objects. Advanced retrieval techniques.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS119DP	Oracle: Database Administration	Basic administrative tasks performed by a database administrator (DBA). Conceptual understanding and hands-on applications of the Oracle database architecture and interaction of its components.	Prerequisites: A grade of C or better in CIS119DO, or permission of Instructor. (CIS126++ or CIS121++ or MST152++) is recommended.	L+L 3.0 4.0 4.0
CIS120AJ	Introduction to Digital Photo Editing	Introduction to digital photography and image editing. Digital photo editing use of electronic techniques to select, manipulate, and edit images.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS120DA	Introduction to Adobe Premiere	Foundations of video import, export, and editing. Includes parts and function of a video camera, preproduction and production, incorporating photographs, titles, graphics, animation and audio, capturing, editing, rendering and outputting digital video. Prepares students for the Adobe Certifications related to Adobe Premiere.	Prerequisites: None.	L+L 3.0 4.0 4.0

CIS120DB	Introduction to Adobe Illustrator	Provides students with the knowledge and skills to use Adobe Illustrator graphics software on a computer. Basic foundation course in the use of electronic techniques to create, manipulate, and edit images, text, abstract art, graphics design, color graphics and business charts; determine file formats appropriate for web and print; utilize tools to optimize graphics and create a PDF file.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS120DC	Introduction to Adobe Animate	Focuses on entry-level skill expectations for digital animation using Adobe Animate. Covers basic animation techniques used in the creation, manipulation, and editing of animation graphics. Prepares students for the Adobe certifications related to Adobe Animate.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS120DF	Introduction to Adobe Photoshop	Focuses on entry-level skills and knowledge for digital imaging using Adobe Photoshop. Prepares students for the Adobe Certifications related to Photoshop.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS120DG	Fireworks: Web Graphics	Use of graphics software to create and edit vector and bitmap (raster) graphics. Creation and manipulation of paths and special effects. Covers slices, buttons, pop-up menus, navigation bars, and animations for use in web sites.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS120DK	Introduction to Digital Video Editing	Introduction to digital video editing comprises of a foundation for video import, export, and editing functions. Includes parts and function of a video camera, preproduction and production, incorporating photographs, titles, graphics, animation and audio, capturing, editing, rendering and outputting digital video.	Prerequisites: None.	L+L 3.0 4.0 4.0

CIS120DL	Introduction to Adobe After Effects	Includes creating visual effects for video projects. Explores techniques and methodologies used to create shots for big budget special effects. Topics include color and light matching, keying, motion tracking, rotoscoping and working with film.	Prerequisites: A grade of C or better in CIS120DA or CIS120DK, or permission of Instructor.	L+L 3.0 4.0 4.0
CIS120DO	Introduction to Adobe Audition	Introduction to editing audio files in a multitrack editing environment using Adobe Audition. Includes the import of files in a variety of formats that were generated using other software and how to export files.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS120DP	Adobe Acrobat Pro: Portable Document Format (PDF) Files	Introduction to creating PDF (Portable Document Format) files using Adobe Acrobat for web viewing and printing. Addresses creation of interactive PDF documents including security settings, navigation links, and form fields.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS121AB	Microsoft Command Line Operations	Use of the Microsoft command line interface: basic concepts, internal and external commands, subdirectories, and editor.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS121AE	Windows Operating System: Level I	Specific topics include Windows basics, navigating and customizing the desktop, maintaining hardware and software, improving performance, configurations, securing your computer, taskbar, organizing, searching and managing folders and files, installing and uninstalling applications, Internet Explorer fine tuning, security, and searching, including advanced search techniques, keyboard shortcuts, and current topics.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS121AH	Microsoft PowerShell/Command Line Operations	Day-to-day command line administration tasks of Microsoft Windows. PowerShell used to create scripts to administer Microsoft windows environment.	Prerequisites: None. MST150++ suggested but not required.	L+L 3.0 4.0 4.0

CIS121AI	Mac Operating System	Specific topics include getting started with Mac OS; working with disks, folders, and files; installing and using applications; setting system preferences; printing, faxing, and scanning; getting and living online; using iLife; sharing a Mac with other users; creating a home network; and maintaining the Mac.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS122AE	Windows Operating System: Level II	Additional capabilities of the Windows program that configure devices and customize the presentation of the operating system. System tools, control panel utilities, the My Computer, Network Neighborhood, and Microsoft Exchange desktop icons. Other helpful utilities presented.	Prerequisites: A grade of C or better in CIS121AE or permission of Instructor.	L+L 1.0 2.0 2.0
CIS124AA	Project Management Software: Level I	Utilization of project management software packages by managers and advanced business students to solve critical management planning tasks. Evaluation of management opportunities utilizing software packages to monitor project progress and resource allocation. Includes "what-if" analyses, and preparation of management reports	Prerequisites: None.	L+L 1.0 1.7 1.7
CIS124BA	Project Management Software: Level II	Advanced use of project management software. Covers features and functions to solve critical management planning tasks. Project communications, scheduling, resource allocation, tracking processes and importing and exporting data also covered. Project consolidation emphasized.	Prerequisites: A grade of C or better in CIS124AA or permission of Instructor.	L+L 1.0 1.7 1.7
CIS126AA	UNIX Operating System: Level I	Use of the UNIX operating system: system components, built-in commands, files and directories, editors, and UNIX Shell and command lines.	Prerequisites: None.	L+L 1.0 2.0 2.0

CIS126AL	Linux Operating System I	Introduction to the Linux Operating system. Develop knowledge and skills required to install, configure a Linux-based workstation including basic network functions.	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS126BA	UNIX Operating System: Level II	Installation, configuration, and maintenance of the UNIX operating system	Prerequisites: A grade of C or better in CIS126AA.	LEC 1.0 1.0 1.0
CIS126CA	UNIX Operating System: Level III	Create login scripts and batch files, and maintain system communications	Prerequisites: A grade of C or better in CIS126BA.	LEC 1.0 1.0 1.0
CIS126DA	UNIX Operating System	Use of a UNIX operating system including system components, built-in commands, files, and directories, editors, and UNIX shell and command lines. Installation, configuration, and maintenance of a UNIX operating system. Create scripts and batch files, and maintain system communications.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS126DL	Linux Operating System	Introduction to the Linux Operating system. Develop knowledge and skills required to install, configure and troubleshoot a Linux-based workstation including basic network functions. Learn basic command line and Graphical User Interface (GUI) desktop environment utilities and applications. Fundamental abilities to achieve the entry-level industry certification covered.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS126RH	Red Hat System Administration I	Introduction to core administration skills needed to manage a Red Hat Enterprise Linux system. This Red Hat Academy course helps prepare for the Red Hat certification exams using a hands-on, task-focused curriculum.	Prerequisites: None.	L+L 3.0 4.0 4.0

CIS128	Databases in Practice Management	Use of a Practice Management Database (Electronic Health Record software) for installation and maintenance of an Electronic Health Record. Application of policies and procedures for data control, security, privacy, and confidentiality of health information in electronic health information management systems.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS129	Introduction to Microsoft Sharepoint	Designed to provide basic skills enabling the end user to navigate, manage documents and collaborate using Microsoft Sharepoint.	Prerequisites: A grade of C or better in BPC110, or CIS105, or permission of Instructor.	L+L 1.0 2.0 2.0
CIS130DA	3D Studio Max: Modeling	Introduction to 3D modeling using 3D Studio Max. Emphasis will be placed on Polygonal, Solid, and Surface modeling tools. Students will also understand concepts such as modifiers, sub-object editing, extruding, Booleans, lofting, lathing and compound object modeling. Introduction to basic lighting, texturing and rendering techniques.	Prerequisites: A grade of C or better in CIS105.	L+L 3.0 4.0 4.0
CIS130DB	3D Studio Max: Animation	Introduction to three-dimensional animation tools and principles, with an emphasis on character construction and animation. 3D Studio Max will be the primary application for use in this class.	Prerequisites: A grade of C or better in CIS105.	L+L 3.0 4.0 4.0
CIS131AA	Doing Business on the Internet	Overview of different ways businesses are taking advantage of and using the Internet. Includes how companies are selling items and services over the Internet; techniques used to expand customer contacts; marketing strategies; availability of government and financial information; future potential and disadvantages; using the Internet for customer service; establishing a World Wide Web site. Some previous computer experience preferred	Prerequisites: None.	LEC 1.0 1.0 1.0



CIS132	HTML/CSS	Overview of foundational HyperText Markup Language (HTML) and Cascading Style Sheets (CSS) coding. Create web pages and sites that adhere to web standards and best practices using current web coding standards.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS133AA	Internet/Web Development Level I-A	Overview of the Internet and its resources. Hands-on experience with various Internet communication tools	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS133DA	Internet/Web Development Level I	Overview of the Internet/World Wide Web (WWW) and its resources. Hands-on experience with various Internet/WWW resource discovery, information retrieval, and social media tools. Design and Development of multi-page websites using current Hyper Text Markup Language (HTML) and Cascading Style Sheets (CSS) standards..	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS136	Content Management Systems: WordPress	Overview of WordPress Content Management System. Includes hands-on design and creation of web pages and blogs for the World Wide Web. Designed to cover best practices for web site/blog creation.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS138DA	Desktop Design and Publishing Using Adobe InDesign	Use of Adobe InDesign to compose and print textual and graphic materials of high quality. Includes word processing of copy, use of graphics programs, layout of design elements, printing alternatives, and file formats.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS140	Survey of Multimedia Technology	Introduction to multimedia technology and its uses. Overview of the various hardware and software used in developing and delivering multimedia. Emphasis on how multimedia is used in education and training. Provides a basic understanding of the process used to define and develop multimedia applications.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 2.0 3.0 3.0

CIS150	Programming Fundamentals	Structured program design and logic tools. Use of computer problems to demonstrate and teach concepts using appropriate programming language.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS150AB	Object-Oriented Programming Fundamentals	Structured and Object-Oriented design and logic tools. Use of computer problems to demonstrate and teach concepts using an appropriate programming language.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS151	Computer Game Development -Level I	Introduction to object-oriented game development, game design, and game theory. Use of computer software to demonstrate and teach concepts using an appropriate game development platform to model real-time simulations and create computer games using object oriented tools. Introduction to developing PC games, educational software, and training software using windows based object oriented developments tools.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS154	Database Modeling and Design	Top-down, systematic approach to defining a database design based on analysis of business information and requirements. Identifying and evaluating standard data model and design patterns. Developing an entity-relationship (ER) diagram that accurately reflects the business. Mapping the ER diagram to an initial database design and revising for complex entities, attributes, and relationships.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS156	Python Programming: Level I	Use of the Python programming language to solve problems using suitable examples from business or other disciplines.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS159	Visual Basic Programming I	Use of the Visual Basic programming language to solve problems using suitable examples from business or other disciplines	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0

CIS162	C Programming I	Beginning C programming. Includes features needed to construct programs, functions, pointers, input and output options, data types, structures, and unions, and disk file operations.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 3.7
CIS162AB	C++: Level I	Introduction to C++ programming including general concepts, program design, development, data types, operators, expressions, flow control, functions, classes, input and output operations, debugging, structured programming, and object-oriented programming	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS162AC	Visual C++: Level I	Introduction to Visual C++ programming including general concepts, program design, development, data types, operators, expressions, flow control, functions, classes, input and output operations, debugging, structured programming, and object-oriented programming.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS162AD	C#: Level I	Introduction to C# programming including general concepts, program design, development, data types, operators, expressions, flow control, functions, classes, input and output operations, debugging, structured programming, and object-oriented programming	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS163AA	Java Programming: Level I	Introduction to Java programming. Includes features needed to construct Java Applets, Java Applications, control structures, methods, arrays, character and string manipulation, graphics, and object-oriented programming	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0

CIS164AB	Oracle: PL/SQL Programming	Writing PL/SQL procedures, functions, and packages. Creating and managing PL/SQL program units and database triggers in Oracle development environment. Managing dependencies and manipulating large objects	Prerequisites: A grade of C or better in CIS119DO or permission of Instructor.	L+L 3.0 4.0 4.0
CIS165	Introduction to IOS Application Development	Introduction to iOS device programming utilizing the XCode application, and the programming languages Objective-C and/or Swift, utilizing various iOS frameworks. Understand iOS hardware and feature basics. Go through the entire design process from concept to final product delivery.	Prerequisites: A grade of C or better in CIS150++, or CIS156, or CIS159, or CIS162++, or CIS163AA, or permission of Instructor.	L+L 3.0 4.0 4.0
CIS165DA	Introduction to Android Application Development	Beginning with an overview of Android features, this class explores the required software tools and programming techniques for developing Android device applications from creating the user interface, working with activities, intents and views, to using databases, providing data persistence, accessing device services, to debugging and publishing applications.	Prerequisites: A grade of C or better in CIS150++, or CIS156, or CIS159, or CIS162++, or CIS163AA, or permission of Instructor.	L+L 3.0 4.0 4.0

CIS165DB	C#/VB.NET: Windows 8 App Development	Building upon desktop application development with Visual Studio using VB.NET or C# languages, developing apps for Windows 8 utilizes Extensible Application Markup Language (XAML) for interface design. Windows 8 utilizes UI design standards that are unique from previous versions. Develop apps for Windows 8 smartphones and tablets that utilize touch input methods, translate into different resolutions, states, and orientations, and can tap into mobile features such as location and acceleration sensors. Includes working with external data and packaging for Windows Store distribution.	Prerequisites: A grade of C or better in CIS159 or CIS162AD or permission of Instructor.	L+L 3.0 4.0 4.0
CIS165DC	Xamarin/C# Cross-Platform Development	Develop cross-platform mobile apps for iOS, Android, and Windows devices using the Xamarin.Forms Platform and C#, utilizing the Visual Studio IDE. Focusing on Xamarin.Forms projects, the course includes PCL and SAP approaches to shared code, developing interfaces with XAML or in C# code, emulator testing, data binding, backgrounding, packaging for deployment. Coding techniques include Layouts and shared controls (views), MVVM pattern, LINQ, SQLite, and Dependency Injection for platform specific coding.	Prerequisites: A grade of C or better in CIS162AD, or permission of Instructor.	L+L 3.0 4.0 4.0
CIS166	Web Scripting/Programming	Software development for Web sites, including client-side script and Common Gateway Interface (CGI) scripting. Covers Web-based transaction processing and use of databases in conjunction with the Web. Includes security issues.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 3.0 4.0 4.0

CIS166AA	Introduction to JavaScript	Introduction to basic JavaScript programming concepts including syntax. Covers Hypertext Markup Language (HTML), programming logic and debugging, as well as forms manipulation and animation.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS166AC	Web Scripting with Active Server Pages (ASP).NET	Introduction to web scripting using Microsoft's ASP.Net (Active Server Pages). Web application development using Hypertext Markup Language (HTML), ASP.Net Web Forms, programming logic, and Structured Query Language (SQL).	Prerequisites: A grade of C or better in CIS133DA and (CIS159 or CIS162AD) or permission of Instructor.	L+L 3.0 4.0 4.0
CIS166AE	Web Scripting with PHP: Hypertext Preprocessor (PHP)	Introduction to web scripting with PHP (PHP: Hypertext Preprocessor). Web application development using Hypertext Markup Language (HTML), PHP, programming logic, and Structured Query Language (SQL).	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS171	Survey of Blockchain Technology	This survey class will introduce you to the exciting world of distributed ledger technology (i.e. the blockchain), cryptocurrencies such as Bitcoin and Ether as well as smart contracts. The emphasis is on the blockchain's role in revolutionizing business. Basic knowledge of computer operation and the ability to browse the Internet are recommended.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS175SA	Interconnecting Cisco Network Devices	Procedures for interconnecting existing computer networks. Emphasis on internetworking, layer usage, and software configuration. Covers router and switch usage, protocol suite and wide-area networking, as well as Internet protocol address and routing configuration. Also includes frame relay and X.25 configuration, access list traffic management, and alternate router access information.	Prerequisites: None.	L+L 3.0 4.0 4.0

CIS189	Virtualization and IT Solutions for Digital Businesses	Introduction to Virtualization course is designed to teach basic virtualization computing concepts to learners. It then expands on the basic technical introduction provided and explores the concepts in more detail with an emphasis on mapping the technologies to business needs and solutions. This course is suitable for anyone who wants to know more about terms like "cloud" and "virtualization." It will serve as a foundation to build upon when students learn how to design, install and configure various cloud technologies.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS190	Introduction to Networking	Overview of networks. Emphasis on the elements of a network, current issues and products, and use of a network. Includes terminology, hardware and software components, connectivity, resource monitoring and sharing, electronic mail and messaging, and security issues. Helps prepare students for the CompTIA Network+ examination.	Prerequisites: None. Corequisites: CIS105 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS197	VMware ESXI Server Enterprise	Introduction to vSphere and VMware ESXI server in the enterprise. Covers many aspects of virtualization for VMware ESXI server administration. Designed to develop knowledge and skills required to install, configure and troubleshoot a VMware ESXI Server (vSphere) including basic network functions.	Prerequisites: A grade of C or better in [CIS105 and (BPC270 or MST150++) and (CIS126DL or CIS126RH) and (CIS190 or CNT140AB)] or permission of Instructor.	L+L 3.0 4.0 4.0

CIS198	VMware vSphere: Optimize and Scale	VMware vSphere: Optimize and Scale is designed for experienced VMware vSphere users. It teaches advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. Through a mix of lecture and hands-on labs, you will configure and optimize the vSphere features that build a foundation for a truly scalable infrastructure and discuss when and where these features have the greatest effect. It enables you to understand vSphere at a deeper level and how to use advanced features and controls.	Prerequisites: A grade of C or better in CIS197.	L+L 3.0 4.0 4.0
CIS200	VMware NSX: Install, Configure, Manage	This comprehensive, fast-paced training course focuses on installing, configuring, and managing VMware NSX. This course covers NSX as a part of the software-defined data center platform, implementation use cases along with features of NSX, and functionality operating at Layer 2 through Layer 7 of the OSI model. Lecture and hands-on lab activities support the student's understanding of NSX features, functionality, and on-going management and control.	Prerequisites: A grade of C or better in CIS197.	L+L 3.0 4.0 4.0
CIS213DE	Advanced Microsoft Word: Word Processing	Using advanced word processing software features to perform tasks such as mail merge, collaboration, web pages, math functions, macros, photo enhancements, graphics, tables, forms and manage long documents.	Prerequisites: A grade of C or better in CIS113DE or (CIS113AE and CIS113BE and CIS113CE) or permission of Instructor.	L+L 3.0 4.0 4.0



CIS214DA	Advanced Excel for Data Analytics	Advanced Excel spreadsheet features for data analytics including advanced functions, PivotTables, Data Modelling, Dashboard creation and forecasting for Business Intelligence (BI). Includes capstone project of an interactive dashboard using a multi-table Excel Data Model.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: [CIS114DE and (CIS117AM or CIS276DA or CIS276DB)], or permission of Instructor.	L+L 3.0 4.0 4.0
CIS214DE	Advanced Excel Spreadsheet: Level II	Advanced Excel spreadsheet features including formatting techniques, macros and Visual Basic for applications. Templates, built-in functions and lists as well as analysis tools including Pivot Tables and Goal Seek covered. Import and export data, workgroup collaboration and Internet features of Excel emphasized.	Prerequisites: A grade of C or better in CIS114DE or permission of Instructor.	L+L 3.0 4.0 4.0
CIS217AM	Advanced Microsoft Access: Database Management	Advanced database concepts including database design, primary and secondary key selection and relationships between tables. Queries, sub forms, macros, events, Visual Basic modules and Access Internet features also covered	Prerequisites: A grade of C or better in CIS117CM or CIS117DM.	L+L 3.0 4.0 4.0
CIS220DC	Flash: Advanced Animation and ActionScript	Advanced Flash programming, action scripting, tweening, advanced buttons and user input, movie clips, using dynamic sound and text, managing information flow, Object-Oriented Programming concepts in relation to Flash.	Prerequisites: A grade of C or better in CIS120DC or permission of Instructor.	L+L 3.0 4.0 4.0
CIS220DF	Adobe Photoshop Level II: Advanced Digital Imaging	Goes beyond the basic use of palettes, selections, layers, menus, and tool options, and focuses on using Photoshop software's advanced features to manipulate and correct digital and digitally produced images.	Prerequisites: A grade of C or better in CIS120DF or permission of Instructor.	L+L 3.0 4.0 4.0

CIS220DK	Advanced Adobe Premiere	Includes an in-depth study of digital video editing using premiere, including preproduction, production and post production. Advanced techniques into a capstone project. Emphasis placed on enhanced workflow processes, integration of other applications into Premiere, multiple output formats, timesaving quick key setup and advanced production and editing tools.	Prerequisites: A grade of C or better in CIS120DA, or CIS120DK, or permission of Instructor.	L+L 3.0 4.0 4.0
CIS221AB	Microsoft Power Shell	Microsoft Power Shell (PS) is used to aid system administrators of Microsoft Network Operating Systems (NOS) in automating many administrative tasks through shell script automation.	Prerequisites: A grade of C or better in BPC121AB CIS121AB or permission of Instructor.	L+L 1.0 2.0 2.0
CIS224	Project Management Microsoft Project for Windows	Introduction to project management concepts while working with MS Project to solve complex project management networks, including creating Gantt and PERT charts, tracking project progress, planning for restrictions, and integrating MS Project with other software packages such as Excel, Word, Powerpoint, and cc Mail.	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS225	Business Systems Analysis and Design	Investigation, analysis, design, implementation and evaluation of business computer systems.	Any programming language or permission of Instructor.	L+L 3.0 4.0 4.0
CIS225AB	Object-Oriented Analysis and Design	Methodologies and notations for fundamental object-oriented analysis and design including use cases, objects, classes, stereotypes, and relationships. Object-oriented iterative process for system development. A continuous application development exercise for applying the analysis and design concepts.	Any programming language or permission of Instructor.	L+L 3.0 4.0 4.0

CIS226AL	Internet/Intranet Server Administration-Linux	Configuration and management of internet/intranet services, including the Apache web server, Simple Mail Transfer Protocol servers (SMTP), Structured Query Language (SQL server), File Transfer Protocol (FTP), Network Time Protocol (NTP), and other network services used in home and small business environments. Covers basic security configuration and testing.	Prerequisites: A grade of C or better in CIS126 (any module) or permission of Instructor.	L+L 3.0 4.0 4.0
CIS227	Assembly Language	Concepts and use of the Assembly programming language, including basic arithmetic operations, flow control, and memory management.	Prerequisites: A grade of C or better in CIS162++ or permission of Instructor.	L+L 3.0 4.0 4.0
CIS228	Advanced Databases for Practice Management	Advanced installation, configuration and use of Practice Management Database (Electronic Health Record software) for implementation and maintenance of for vendor specific and open source Electronic Health Records (EHRs). Configuration of policies and procedures for data control, security, privacy, and confidentiality of health information in electronic health information management systems.	Prerequisites: A grade of C or better in CIS128 or permission of Instructor.	LEC 3.0 4.0 4.0
CIS230DA	3D Studio Max: Materials	Emphasis on creating and applying materials and textures to three-dimensional environments. Techniques for creating skins, surfaces, and shading types for objects, environments and characters will be explored. Original textures, both life-like and imaginary, will be created using 3D Studio Max and a 2D computer graphics software application.	Prerequisites: A grade of C or better in CIS130DA or CIS120DF or CIS120DG or permission of Instructor.	L+L 3.0 4.0 4.0
CIS230DB	3D Studio Max: Lighting and Rendering	Emphasis on lighting and rendering for three-dimensional environments. Techniques for illuminating scenes and characters will be explored. Prepare scenes for rendering to video, film and real-time rendering using 3D Studio Max.	Prerequisites: A grade of C or better in CIS130DA or permission of instructor.	L+L 3.0 4.0 4.0

CIS231	Ethereum Blockchain Application Development	Exploration of the theory behind Ethereum blockchain technology and the development of Ethereum smart contracts. In-depth emphasis on programming concepts relating to the creation and eventual deployment of smart contracts to the Ethereum blockchain.	Prerequisites: A grade of C or better in CIS171 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS233AA	Internet/Web Development Level II-A	Design and creation of pages on the World Wide Web using hypertext markup language (HTML). Hands-on experience authoring HTML and preparing sophisticated web documents.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 1.0 2.0 2.0
CIS233AC	Internet Web Development: Dreamweaver Level I	Design and development of websites using Dreamweaver. Hands-on experience designing, developing, testing, and publishing web documents that contain client-side web technologies.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 1.0 2.0 2.0
CIS233BA	Internet/Web Development Level II-B	Hands-on experience designing Web presentations using advanced markup languages, programming languages, scripts, and multimedia	Prerequisites: A grade of C or better in CIS233AA or permission of Instructor.	LEC 1.0 1.0 1.0
CIS233DA	Internet/Web Development Level II	Design and create pages on the World Wide Web with a variety of markup languages, programming languages, scripts, and multimedia. Hands-on experience authoring and preparing sophisticated web documents. Exploration of best practices/issues for web design and publishing and careers in web development and e-commerce.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 3.0 4.0 4.0

CIS233DC	Internet Web Development: Dreamweaver	Design and development of comprehensive and interactive websites using Dreamweaver. Hands-on experience designing, developing, testing, and publishing web documents that contain various client-side web technologies. Assists in preparing students for the Adobe Certifications related to Adobe Dreamweaver.	Prerequisites: A grade of C or better in CIS132 or CIS133DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS234	XML Application Development	The use of Extensible Markup Language (XML) to make documents smarter, simplify Web automation, and to communicate between databases, both within and between corporations. Includes techniques for XML generation, data extraction and sharing, and transformation and managing of XML files.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS235	e-Commerce	Introduction to Electronic Commerce on the Internet. Designing an electronic storefront including web page content and development, e-commerce site marketing, advertisement, legal and security considerations, credit card and other debit transaction covered. Also includes current issues in e-commerce.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS236	Web-Based Teaching and Learning I	Experience using a web-based learning environment from an online student's perspective. Use communication tools, submit assignments, use evaluation tools, create homepages, and navigate online-learning environment. Introduction to basics of online pedagogy. Hands-on experience with a web-based learning environment.	Prerequisites: A grade of C or better in CIS133DA or permission of Instructor.	L+L 2.0 3.0 3.0

CIS237	Web-Based Teaching and Learning II	Create an online or hybrid course using a web-based learning environment. Create, prepare, and manage content and resource files; locate and add resources; and manage a course homepage. Add, delete, and revise tools; create, maintain, and release quizzes and assignments; and manage a course. Track students, data, and revise student grades, submissions, and attendance. Hands-on experience with creating a course using a web-based learning environment	Prerequisites: A grade of C or better in CIS236 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS238DL	Linux System Administration	Managing Linux Operating Systems including sophisticated manipulation of file structures, backup systems, printing processes, troubleshooting, user account management, hard disk maintenance and configuration, process monitoring and prioritizing, kernel customization, and system resource control. Preparation for industry certifications such as the CompTIA Linux+, the Red Hat Certified System Administrator (RHCSA), the Red Hat Certified Engineer (RHCE) and the Linux Professional Institute (LPIC-1).	Prerequisites: A grade of C or better in CIS126DL or CIS126RH or permission of Instructor.	L+L 3.0 4.0 4.0
CIS238RH	Red Hat System Administration II	Continue to develop core administration skills needed to manage a Red Hat Enterprise Linux system. This Red Hat Academy course helps to prepare students for the Red Hat certification exams using a hands-on, task-focused curriculum.	Prerequisites: A grade of C or better in CIS126RH, or permission of Instructor.	L+L 3.0 4.0 4.0
CIS239DL	Linux Shell Scripting	Linux Shell Scripting syntax and methods including the automation of system tasks as well as interpreted user-level programming. Course includes the Linux Borne Again Shell (BASH) as well as a variety of industry competitors.	Prerequisites: A grade of C or better in CIS238DL or CIS238RH or permission of Instructor.	L+L 3.0 4.0 4.0

CIS240	Local Area Network Planning and Design	Analysis of the needs and requirements for a local area network (LAN). Emphasis on basic systems analysis and design for a local area network, selection of appropriate hardware and software components. Includes current and future issues, needs analysis, cost estimation, selection of connectivity and network components, and issues relating to access, security, and support	Prerequisites: A grade of C or better in CIS190 or MST140 or permission of Instructor.	LEC 3.0 3.0 3.0
CIS240DL	Linux Network Administration	In depth networking based on Linux servers and the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite. Integrating Linux servers and workstations into a network environment with multi-platform network operating systems including a variety of open-standard and proprietary protocols. Preparation for industry certifications such as the CompTIA Linux+, the Red Hat Certified System Administrator (RHCSA), the Red Hat Certified Engineer (RHCE) and the Linux Professional Institute (LPIC-1).	Prerequisites: A grade of C or better in CIS238DL or permission of Instructor.	L+L 3.0 4.0 4.0
CIS240RH	Red Hat System Administration III	Provides solid understanding of how to automate services on a Linux system. Covers use of Ansible to automate provisioning, configuration, application deployment, and orchestration on Red Hat Enterprise Linux 8. Content aligns with the Red Hat Certified Engineer (RHCE - EX294) exam, a professional certification.	Prerequisites: A grade of C or better in CIS238RH or permission of Instructor.	L+L 3.0 4.0 4.0
CIS243	Internet/Web Development Level III	Development of interactive websites with graphics, video, and sound using advanced web design techniques and tools. Design theory for maximizing web readership, interactive and multimedia elements, speed and accessibility optimization, and intuitive user interfaces	Prerequisites: A grade of C or better in CIS233DA or permission of Instructor.	L+L 3.0 4.0 4.0

CIS250	Management of Information Systems	The study of business information systems and its management, communication, e-business strategies, emerging technologies, database concepts, and project management. Overview of systems analysis and design. Learn about the competitive and strategic uses of information systems and how they are transforming organizations and their management.	Prerequisites: A grade of C or better in CIS105.	L+L 3.0 4.0 4.0
CIS251	Computer Game Development -Level II	Advanced object-oriented game development, advanced game design, and advanced game theory. Use of game development software tools to demonstrate advanced concepts for modeling real-time simulations and creating computer games using object oriented development tools. In depth coverage of game programming (scripting) techniques, and decision logic using object oriented techniques.	Prerequisites: A grade of C or better in CIS151 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS253	Computer Game Development -Level III	Advanced object oriented game development, controlling and programming game and windows resources using the game development language. Modeling real-time simulations and game worlds using advanced programming techniques and artificial intelligence. Creation of network and Internet based multi-player games using object oriented techniques and packet based communication protocols	Prerequisites: A grade of C or better in CIS251 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS259	Visual Basic Programming II	Use of the Visual Basic programming language to identify and solve advanced problems using suitable examples from business or other disciplines.	Prerequisites: A grade of C or better in CIS159 or permission of Instructor.	LEC 3.0 4.0 3.7



CIS261	Hyperledger Blockchain Application Development	Exploration of the theory behind Hyperledger blockchain technology and the development of Hyperledger smart contracts. In-depth emphasis on programming concepts relating to the creation and eventual deployment of smart contracts to the Hyperledger blockchain.	Prerequisites: A grade of C or better in CIS231 or permission of Instructor.	L+L 3.0 4.0 4.0
CIS262AB	C++: Level II	Advanced level C++ programming with emphasis on arrays, data management, dynamic memory allocation, object-oriented programming concepts, input/output operations, libraries, and debugging techniques. Includes overview of other advanced applications of C++.	Prerequisites: A grade of C or better in CIS162AB or permission of Instructor.	L+L 3.0 4.0 4.0
CIS262AD	C# Level II	Advanced C# programming with emphasis on data structures, dynamic memory allocation, object-oriented programming, user interfaces, and database processing. Overview of web applications, network programming, and reporting tools	Prerequisites: A grade of C or better in CIS162AD or permission of Instructor.	L+L 3.0 4.0 4.0
CIS263AA	Java Programming: Level II	Intermediate Java programming. Includes features needed to construct object-oriented programming, multithreading, multimedia, files, streams and data structure	Prerequisites: A grade of C or better in CIS163AA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS265	Advanced iOS Application Development	Advanced iOS device programming utilizing the Swift/XCode application, and the programming languages Objective-C and/or Swift, utilizing various iOS frameworks. Understand iOS hardware and feature basics. Go through entire design process from concept to final product delivery.	Prerequisites: A grade of C or better in CIS150++ and CIS165, or permission of Instructor.	L+L 3.0 4.0 4.0

CIS265DA	Advanced Android Application Development	Advanced Android device programming utilizing an Android Integrated Development Environment, and an Android-focused programming language such as Java or Kotlin, utilizing various advanced activity layouts, views, and intents. Covers advanced Object Oriented Programming (OOP) practices, local and cloud-based database backends, threading, incorporating device features and sensors, and unit testing.	Prerequisites: A grade of C or better in CIS165DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS266	Network Integration Capstone	Application of project management, installation and troubleshooting to integrate multiple operating systems. Topics include: diagnostic and troubleshooting procedures, security vulnerability and penetration software to installation.	Prerequisites: A grade of C or better in (CIS238DL and CIS240DL) or CNT170AA or (MST155DA and MST157DA) and (CIS270 or CIS271DL or CNT205) or associated industry certifications or permission of Instructor.	L+L 4.0 5.0 5.0
CIS270	Essentials of Network and Information Security	Threats to security of information systems; responsibilities and basic tools for information security, including communication security, infrastructure security, organizational security and basic cryptography. Introduction to the language of network security and hardware, software and firmware components of an information security system for local, metropolitan, enterprise, and wide area networks. Helps prepare participants for the Comptia Security+ exam and the GIAC Security Essentials Certificate (GSEC).	Prerequisites: A grade of C or better in BPC270 or CIS190 or CNT140AB or MST150++ or permission of Instructor.	L+L 3.0 4.0 4.0

CIS271DB	Information Security Essentials	Overview of information security principles, access control, risk management, and compliance. Provides partial preparation for certification in one or all of the following: CompTia Security + exam, International Information Systems Security Certification Consortium (ISC)2, Systems Security Certified Practitioner (SSCP) exam, the Committee on National Security Systems (CNSS) 4011 certification, or GIAC Security Essentials Certificate (GSEC).	Prerequisites: A grade of C or better in (BPC270 or CIS126DL or CIS126RH or MST150++) and (CIS190 or CNT140AB) and (CIS250 or ITS120).	L+L 3 4 4
CIS271DL	Linux Security	Implementing in-depth security methods and techniques in a Linux-based network environment. Utilize programs, utilities and configuration techniques to provide user-level, file system, and network security. Gain knowledge in a variety of security cracking techniques and how to guard against them. In all aspects of security, the standard of practicing professional ethics seriously emphasized. Preparation for industry certifications such as the SAIR/GNU LCP and LCA certificates, CompTIA's Linux+, RHCT, RHCE, and LPIC	Prerequisites: A grade of C or better in CIS240DL or Permission of Instructor.	L+L 3.0 4.0 4.0

CIS272DB	Information Security Principles	Covers threats to the IT infrastructure and how they can impact operations. Demonstrates strategies to mitigate risk impacts as they relate to the IT infrastructure. Provides technical knowledge required to execute on the essentials of information security. Provides partial preparation for certification in one or all of the following: Comptia Security + exam, International Information Systems Security Certification Consortium ((ISC)2), Systems Security Certified Practitioner (SSCP) exam, the Committee on National Security Systems (CNSS) 4011 certification, or GIAC Security Essentials Certificate (GSEC).	Prerequisites: A grade of C or better in CIS271DB.	L+L 3.0 4.0 4.0
CIS274DA	Introduction to Power Systems Security	Demonstrates distinct difference between control systems, used to control physics and computer information systems, used to process data, in the Power and Utility industry. Background information related to the Power Systems industry, elements and security risks. In-depth overview of how all elements of the power system function, as well as risks.	Prerequisites: A grade of C or better in CIS272DB and PPT120, or permission of Instructor.	L+L 3.0 4.0 4.0

CIS275DA	Generation and Transmission Systems Security	Introduction to industrial control systems and how they support Power Generation and Transmission. Risks associated with infrastructures and why it is important to reduce those risks to acceptable levels by securing supporting industrial control systems. Advanced knowledge of industrial control systems used in the power, energy and utility industry with a concentrated focus on cyber security. This experience will also be directly transferable to other industries that operate industrial control systems such as Chemical Processing, Manufacturing, Defense, etc. Partial preparation for the Certified SCADA (Supervisory Control and Data Acquisition) Security Architect (CSSA) certification provided by the Information Assurance Certification Review Board (IACRB).	Prerequisites: A grade of C or better in CIS274DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS275DB	Smart Grid and Distribution System Security	Information security risks associated with a modernized electric power grid. Provides detailed overview of the modern electric power grid including its components, functions and features. Focuses on security risks related to distribution automation and smart meters including smart grid components, interfaces and interactions between components with differing levels of security. Architecture, protocols and security impacts associated with this infrastructure are stressed.	Prerequisites: A grade of C or better in CIS274DA or permission of Instructor.	L+L 3.0 4.0 4.0

CIS275DC	Embedded Systems Security	<p>In-depth overview of embedded systems used in power system utility environments and their underlying infrastructure. Provides understanding of what embedded systems are, how they are implemented and the security risks that are associated with them. Focuses on conducting reconnaissance activities from untrusted networks to identify weaknesses in control system networks. Describes how execution of attacks can be used to gain unauthorized access, creating impacts on embedded systems including the effects that they create. Actions that mitigate or reduce the risk of attacks to embedded systems that support grid operations are stressed. Partial preparation for certifications such as the International Council of Electronic Commerce Consultants (EC-Council) Certified Ethical Hacker (CEH) with a concentration in embedded systems security.</p>	Prerequisites: A grade of C or better in CIS274DA or permission of Instructor.	L+L 3.0 4.0 4.0
CIS275DL	Linux Capstone	<p>The Linux Capstone course aggregates the skills, knowledge, communication, and critical thinking skills from the Linux Program. This course is to emulate a production environment that prepares students to work as a Linux Systems Administrator. The course helps to prepare students for Linux Industry certification exams.</p>	Prerequisites: A grade of C or better in CIS240DL, or CIS240RH, or permission of Instructor.	L+L 3.0 4.0 4.0

CIS276DA	MySQL Database	A broad overview of the MySQL database. Includes Structured Query Language (SQL) instruction for data definition, data manipulation, and data retrieval. Develops knowledge and skills required to install MySQL, model and create new databases, manage users, authentication, and stored procedures, and develop backup/restore strategies.	Prerequisites: A grade of C or better in CIS105, or CIS117DM, or permission of Instructor.	L+L 3.0 4.0 4.0
CIS276DB	SQL Server Database	A broad overview of the Microsoft Structured Query Language (SQL) Server database. Includes SQL instruction for data definition, data manipulation, and data retrieval. Develops knowledge and skills required to install SQL Server, model and create new databases, manage users, authentication, and stored procedures, and develop backup/restore strategies.	Prerequisites: A grade of C or better in CIS105, or CIS117DM, or permission of Instructor.	L+L 3.0 4.0 4.0
CIS280	Current Topics in Computing	Critical inquiry of current topics in computing. Application of industry trends to solve problems and/or investigate issues	Prerequisites: None.	L+L 3.0 4.0 4.0
CIS280AA	Current Topics in Computing	Critical inquiry of current topics in computing. Application of industry trends to solve problems and/or investigate issues	Prerequisites: None.	L+L 1.0 2.0 2.0
CIS280AB	Current Topics in Computing	Critical inquiry of current topics in computing. Application of industry trends to solve problems and/or investigate issues	Prerequisites: None.	L+L 2.0 3.0 3.0
CIS282AA	Volunteerism for Computer Information Systems: A Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0

CIS284	Certified Internet Web (CIW) Associate Certification Preparation Course	Explain and implement Internet technologies, network infrastructure, and protocols. Utilize a variety of markup languages and web technologies to design web pages. Utilize job skills such as project management. Explore best practices/issues for web design, publishing, and e-commerce. Prepare for Certified Internet Web (CIW) Associate Examinations.	Prerequisites: A grade of C or better in CIS233DA or permission of Instructor.	L+L 4.0 5.0 5.0
CIS285	Computer Information Systems Capstone Project	Students will create a capstone project with opportunities for individualized research and application of aggregate technology and professional knowledge and skills obtained throughout the student's program of study. Focus on communication, problem solving, critical thinking, and project management skills.	Prerequisites: Permission of Program Director or Instructor.	L+L 3.0 4.0 4.0
CIS286	Technology Team Peer Mentorship	Students will have an opportunity to mentor other students and work as a team to develop and support a technology project related to their program of study paralleled by professional expertise and guidance from team members, faculty, and/or industry mentor. Focus on application of technology knowledge to the development of a team project to solve real world technology problems/needs with an innovative technology focus. Focus on the team experience and project and workforce development, management and research, as well as mentoring and collaborative professional behaviors needed to facilitate innovations for profitable commercial feasibility.	Prerequisites: A grade of C or better in EPS151. Corequisites: CIS285.	L+L 3.0 4.0 4.0



CIS288	Digital Design Portfolio	Procedures for compiling, evaluating, and selecting prior learning experiences and artifacts for a digital portfolio. Covers techniques for the design, production, and publishing of an online portfolio documenting prior learning. Includes techniques for presenting the digital portfolio for evaluation.	Prerequisites: A grade of C or better in BPC/CIS133DA and (BPC/CIS120DB or BPC/CIS120DF or BPC/CIS138DA) or permission of Instructor.	L+L 2.0 3.0 3.0
CIS290AA	Computer Information Systems Internship	Work experience in business or industry	Prerequisites: Permission of Instructor.	LAB 1.0 6.0 0.0
CIS290AB	Computer Information Systems Internship	Work experience in business or industry	Prerequisites: Permission of Instructor.	LAB 2.0 12.0 0.0
CIS290AC	Computer Information Systems Internship	Work experience in business or industry	Prerequisites: Permission of Instructor.	LAB 3.0 18.0 0.0
CIS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
CIS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

CIS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CIS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CIS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

CLD110	Amazon Web Services Academy Cloud Foundations	Provides a detailed overview of cloud concepts, Amazon Web Services (AWS) core services, security, architecture, pricing, and support. Intended for students who seek an overall understanding of cloud computing concepts, independent of specific technical roles. Helps to prepare students for the AWS Certified Cloud Practitioner exam.	Prerequisites: None. CIS105 suggested but not required.	L+L 2.0 3.0 3.0
CLD120	Amazon Web Services Cloud Architecting	Fundamentals of building IT infrastructure on Amazon Web Services (AWS). Focus on how to optimize use of the AWS Cloud by understanding AWS services and best practices for the AWS Cloud and how they fit into cloud-based solutions. Covers design patterns for architecting optimal IT solutions on AWS, as well as strategies and services implemented on AWS.	Prerequisites: A grade of C or better in CLD110 or permission of Instructor.	L+L 3.0 4.0 4.0
CNP104	Windows Operating System and PC Hardware	Introduction to various aspects of personal computers. Explore various techniques of system components including installation, configuration and troubleshooting. Identify different operating system and software utilized in personal computers, including proper installation, configuration and troubleshooting. Emphasis placed on proper usage of tools, procedures and professionalism.	Prerequisites: ISP116.	216
CNP141	PC Peripherals and Troubleshooting I	Learn about personal computer (PC) peripherals and more advanced troubleshooting techniques. Topics covered include advanced troubleshooting of hardware, advanced troubleshooting of operating systems (OS), advanced troubleshooting of networks, malware removal, printers, scanners and security.	Prerequisites: CNP108.	156

CNP142	PC Peripherals and Troubleshooting II	Students will further their development in advanced troubleshooting of operating systems (OS), advanced troubleshooting of networks, malware removal, printers, scanners and security.	Prerequisites: CNP141.	82
CNP205	Introduction to Network Concepts	Introduction to the computer networking field that covers network terminology and protocols, communication fundamentals in data networks and the Internet. Emphasis placed on the OSI model, internet protocol (IP) addressing, cabling installation and basic network configuration.	Prerequisite: CNP104 or approval of Instructor or Program Manager.	192
CNP210	Computer Maintenance and Troubleshooting	Further development on more advanced troubleshooting techniques. Topics covered include advanced troubleshooting of hardware, operating systems, and networks. In addition, explore malware removal and various security techniques.	Prerequisite: CNP205 or approval of Instructor or Program Manager.	180
CNP215	Networking Basics	Introduction to basic network concepts. Explore the concepts behind the OSI model and the various networking terms. Identify services used in networking such as DHCP, DNS, and the various protocols. Understand subnetting and how it is utilized in networks. Further explore IP addresses and how they are developed, including ways used to calculate IP addresses. Learn about various topologies utilized in networks.	Prerequisites: CNP210 or approval of Instructor or Program Manager.	315
CNP225	Network Technologies	Explore the different equipment that will be utilized in computer networking. Learn about the various routing and switching methods. Develop the skills to work within different WAN and LAN environments. Identify the different physical media used within networking. Understand the different standards utilized in various networking equipment.	Prerequisites: CNP215 or approval of Instructor or Program Manager.	168

CNP230	Network Troubleshooting and Solutions	Learn and identify various network threats seen in networking. Identify the different methods used to attack networks, including how to combat them. Explore various troubleshooting methods utilized in multiple network sizes. Also further explore the different tools that will be used as part of the troubleshooting process, including both physical and software tools.	Prerequisites: CNP225 or approval of Instructor or Program Manager.	157
CNP250	Information Security	Introduction to various concepts throughout the security field. Explore, identify, and defend against various threats in the security world. Further explore the multiple components (both software and hardware) utilized in the security field. This includes technologies such as cloud, automation, and how to secure systems. Identify various methods on access and risk management within networks. Explore various services and methods on data security and recovery. This includes forensics and disaster recovery in conjunction with data and the concept of cryptography.	Prerequisites: Completion of Network+ program or CompTIA Network+ certified or approval of Instructor or Program Manager.	400
CNS102	Foundations for Apprenticeship	The demographics and industry projections of the building and construction trades. Structure and purpose of registered apprenticeship. Apprenticeship roles and responsibilities. Overview of fluctuation in employment and finances inherent to the construction trades. Emphasis on preparation for periods of high and low employment debt management within registered apprenticeship.	Prerequisites: None.	LEC 1.0 1.0 1.0

CNS110	Green Construction Overview	Overview of 'green construction'. Green energy vs. green building, U.S. Green Building Council (USGBC) and the building life cycle, five main areas of green building standards, Leadership in Energy and Environmental Design (LEED) accreditation, and LEED certification.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 0.5 0.5 0.5
CNS182	Construction Estimating and Print Reading	Analysis and interpretation of construction drawings (blueprint reading); interpretation of symbols, annotations, conventions, and terms of trade. Emphasizes learning quantities of material, equipment, and labor for a construction project. Includes a focus on procedures used to apply timely unit costs. Covers Occupational Safety and Health Administration (OSHA) Safety Standards and their impact on construction cost.	Prerequisites: None.	LEC 3.0 3.0 3.0
CNS200	Construction Management: Field Operation	Procedures and methods used by construction contractors to manage field operation during various phases of a project. Includes project team, job scheduling, personnel relations, use of the construction documentation on site, inspection techniques, safety issues, scope and supervision of the overall construction process.	Prerequisites: A grade of C or better in CON181 and CON244, or permission of Department or Division.	LEC 3.0 3.0 3.0
CNS201	Construction Management: Office Operation	Skills and techniques required to manage construction office operations. Includes establishing and financing the business, marketing, office operations, and maintaining relationships with other construction industry entities through a systematic planning approach.	Prerequisites: A grade of C or better in (CON130, CON181, and CON244), or permission of Department or Division.	LEC 3.0 3.0 3.0

CNS205	Sustainable Construction/LEED Certification	Fundamentals of major components of sustainable design and construction, including energy, health care facilities, cultural and natural resources, and other environmental and economic issues of sustainable built environments. Importance of a collaborative team effort with owner, developers, architects, engineers, and constructors will be integrated into the course. Issues impacting schedule and budgets of sustainable construction projects will be analyzed. Prepares student for the Leadership in Energy and Environmental Design (LEED) Certification Exam.	Prerequisites: None.	LEC 3.0 3.0 3.0
CNS230	Computer Aided Design and Drafting (CADD) 3D for Construction & Architecture (CADD II)	Design, construction, and annotation of three-dimensional objects for construction and architecture industries using AutoCAD software.	Prerequisites: A grade of C or better in COM130 or permission of Department or Division.	L+L 3.0 6.0 6.0
CNS240	Advanced Computer Aided Design and Drafting (CADD) for Construction & Architecture (CADD III)	Use of advanced AutoCAD two- and three-dimensional commands along with various customization codes and techniques specific to architecture and construction industries	Prerequisites: A grade of C or better in CNS230 or permission of Department or Division.	L+L 3.0 6.0 6.0
CNS250	Civil Drafting I: Civil 3D	Application of civil drafting software (Civil 3D) for civil drafting and surveying. Use of coordinating geometry and survey point databases to create topographical maps. Interpreting and delineating topographical data and maps for site and route work. Applying the basics of coordinate geometry (COGO) to surveying language.	Prerequisites: A grade of C or better in CON130 or permission of Department or Division.	L+L 3.0 6.0 6.0
CNS251	Civil Drafting II: Civil 3D	Advanced knowledge and skill in using civil drafting software (Civil 3D) in right-of-way improvement. Use of base maps in utility and street improvement; use of street improvements in creation of maps and profiles; use of map and profiles in utility improvements.	Prerequisites: A grade of C or better in CNS250, or permission of Department or Division.	L+L 3.0 6.0 6.0

CNS252	Civil Drafting III: Civil 3D	Use of civil drafting software (Civil 3D) for site development. Includes use of engineering and surveying software in analysis and computation of earthwork and creation of site drawings.	Prerequisites: A grade of C or better in CNS251, or permission of Department or Division.	L+L 3.0 6.0 6.0
CNS271	Home Inspection Structure	Home inspection practices for foundation, footings, roof, and framework, including floor, wall, and ceiling. Covers structural considerations and reporting practices.	Prerequisites: A grade of C or better in (CON244 and CON262) or permission of Department or Division.	LEC 3.0 3.0 3.0
CNS272	Home Inspection Plumbing, Electrical and HVAC	Home inspection practices for plumbing, electrical, heating, cooling, and air conditioning, and defects of exposed parts of these systems in a house structure. Includes components of systems and reporting practices.	Prerequisites: A grade of C or better in CON244 and CON262, or permission of Department or Division.	LEC 3.0 3.0 3.0
CNS273	Home Inspection: Insulation and Interiors	Home inspection practices for insulation and interiors, including walls, ceilings, floors, windows, and doors, and their possible defects. Covers reporting practices.	Prerequisites: A grade of C or better in CON244 and CON272, or permission of Department or Division.	LEC 3.0 3.0 3.0
CNS274	Home Inspection: Roofing and Exteriors	Home inspection practices for roofing and exteriors of a house, and their defects. Covers reporting practices.	Prerequisites: A grade of C or better in (CON244 and CON262) or permission of Department or Division.	LEC 3.0 3.0 3.0
CNS282AA	Volunteerism for Construction: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Department or Division.	LAB 1.0 1.0 0.0
CNS282AB	Volunteerism for Construction: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Department or Division.	LAB 2.0 2.0 0.0
CNS282AC	Volunteerism for Construction: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Department or Division.	LAB 3.0 3.0 0.0
CNS285	Introduction to Residential Plan Review	Application of international model code (building, mechanical, plumbing, and electrical) to contract documents for one- and two-family dwelling residential construction.	Prerequisites: A grade of C or better in (CON244 and CON262) or permission of Department or Division.	LEC 3.0 3.0 3.0



CNS286	Introduction to Commercial Plan Review	Application of international model codes (building, mechanical, plumbing, and electrical) to contract documents for commercial construction.	Prerequisites: A grade of C or better in (CON244 and CON263) or permission of Department or Division.	LEC 3.0 3.0 3.0
CNS290AA	Construction Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. Eighty (80) hours of designated work experience.	Prerequisites: Permission of Department or Division.	LAB 1.0 6.0 0.0
CNS290AB	Construction Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience.	Prerequisites: Permission of Department or Division.	LAB 2.0 12.0 0.0
CNS290AC	Construction Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. Two hundred and forty (240) hours of designated work.	Prerequisites: Permission of Department or Division.	LAB 3.0 18.0 0.0
CNS290AE	Construction Internship	Construction internship office/field experience with private / public agencies or citizen volunteer groups.	Prerequisites: Permission of Department or Division.	LAB 5.0 25.0 0.0
CNS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and ability to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

CNS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and ability to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
CNS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and ability to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
CNS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and ability to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

CNS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CNS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CNS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

CNT140AA	Introduction to Networks	Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students will build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Preparation for Cisco certification examination.	Prerequisites: None.	L+L 4.0 6.0 6.0
CNT140AB	Introduction to Networks	Focus on the architecture, structure, functions, components, and models of the Internet and other computer networks. Principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students will build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Preparation for Cisco certification examination.	Prerequisites: None.	L+L 4.0 6.0 6.0
CNT150AA	Cisco - Routing and Switching Essentials	Architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. Configuration and troubleshooting routers and switches and resolving common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Preparation for Cisco certification examination.	Prerequisites: A grade of C or better in CNT140AA or permission of Instructor.	L+L 4.0 6.0 6.0

CNT150AB	Switching, Routing, and Wireless Essentials	Focus on configuring switches and routers for use in small and medium size networks. Including Virtual Local Area Networks (VLANs), VLAN trunking, Inter-VLAN routing, Spanning Tree Protocol (STP), EtherChannel, Dynamic Host Configuration Protocol (DHCP), First Hop Redundancy, Local area Network (LAN) and Switch security, and Static routing. Knowledge and skills needed to implement a Wireless Local Area Network (WLAN) is also covered. Preparation for Cisco certification examination.	Prerequisites: A grade of C or better in CNT140AB or permission of Instructor.	L+L 4.0 6.0 6.0
CNT160AA	Scaling Networks	Architecture, components, and operations of routers and switches in large and complex networks. Configuring routers and switches for advanced functionality. Configuring and troubleshooting routers and switches and resolving common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Developing the knowledge and skills needed to implement a WLAN in a small-to-medium network. Preparation for Cisco certification examination.	Prerequisites: A grade of C or better in CNT150AA or permission of Instructor.	L+L 4.0 6.0 6.0
CNT160AB	Enterprise Networking, Security, and Automation	Focus on the configuration of routers and switches within small and medium size networks for advanced functionality including Open Shortest Path First (OSPF), Network security, Access Control Lists (ACLs), Network Address Translation (NAT), Wide Area Network (WAN) concepts, Virtual Private Networks (VPNs), Quality of Service (QOS), network management, design, troubleshooting, virtualization, and automation. Preparation for Cisco certification examination.	Prerequisites: A grade of C or better in CNT150AB or permission of Instructor.	L+L 4.0 6.0 6.0

CNT168	CCNA Discovery - Designing and Supporting Computer Networks	Networking design and customer support including gathering requirements, designing basic networks, establishing proof- of-concept, and performing project management tasks. Lifecycle services, including upgrades, competitive analyses, and system integration, in the context of pre-sale support	Prerequisites: A grade of C or better in CNT158.	L+L 4.0 6.0 6.0
CNT170AA	Cisco - Connecting Networks	Wide Area Network (WAN) technologies and network services required by converged applications in a complex network. Criteria selection of network devices and WAN technologies to meet network requirements. Configuring and troubleshooting network devices, and resolving common issues with data link protocols issues, and developing the knowledge and skills needed to implement Internet Protocol Security (IPSec) and Virtual Private Network (VPN) operations. Preparation for Cisco certification examination.	Prerequisites: A grade of C or better in CNT160AA or permission of Instructor.	L+L 4.0 6.0 6.0
CNT171	CCNA Exam Prep	Preparation for renewal of CCNA certification by reviewing the OSI model and industry standards including network topologies, IP addressing, subnet masks, access control list, basic network design and cable installation. Practice the skills to configure, customize, maintain and troubleshoot Cisco routers and switches for Local Areas Networks (LANs) and Wide Area Networks (WANs) using Cisco IOS command set. Review any new material introduced since the last CCNA exam version.	Prerequisites: A grade of C or better in CNT170AA or CCNA certification or permission of Instructor.	L+L 1.0 2.0 2.0

CNT200	CCNP ROUTE: Implementing Cisco IP Routing	Development of knowledge and skills needed to manage Internet Protocol (IP) traffic and access, understand scalable internetworks and Quality of Service (QoS), configure advanced routing protocols Border Gateway Protocol [BGP], Intermediate System to Intermediate System [IS-IS], Enhanced Interior Gateway Routing Protocol [EIGRP], Open Shortest Path First [OSPF], as well as multicast routing, Internet Protocol (IPv6), and perform advanced IP addressing configuration, Dynamic Host Configuration Protocol (DHCP). Preparation for Cisco Certified Network Professional (CCNP) exam.	Prerequisites: A grade of C or better in CNT160AB, or CCNA industry certification, or permission of Instructor. Corequisites: CNT220.	L+L 4.0 6.0 6.0
CNT202	Cisco Secure Firewall Appliance Configuration	Applications of Cisco Networking technologies in designing and implementing security solutions to reduce risk of revenue loss and vulnerability. Hands-on experience and skills in security policy design and management, security technologies, products and solutions, secure firewall design, installation, configuration and maintenance, Authentication, Authorization, and Accounting (AAA), Failover, and Virtual Private Network (VPN) implementation using firewalls.	Prerequisites: A grade of C or better in CNT170AA or permission of Instructor.	L+L 4.0 5.0 5.0

CNT203	CCNA Cybersecurity Operations	Uses virtual environments to simulate real-world cybersecurity threat scenarios and create opportunities for practice with ethical hacking, security monitoring, analysis and resolution. Introduces current technical concepts, such as classification of network attacks, monitoring, analysis of network intrusion data, cryptography, prevention and mitigation of network attacks and application of incident response models to manage network security incidents.	Prerequisites: A grade of C or better in CNT150AB or permission of Instructor.	L+L 4.0 6.0 6.0
CNT205	Cisco Certified Network Associate Security	Associate-level knowledge and skills required to secure Cisco networks. Development of a security infrastructure, identification of threats and vulnerabilities to networks. Mitigation of security threats. Core security technologies. Installation, troubleshooting and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices. Competency in the technologies that Cisco uses in its security structure.	Prerequisites: A grade of C or better in CNT170AA or Certified Cisco Networking Associate (CCNA) certification or permission of Instructor.	L+L 4.0 6.0 6.0
CNT206	Cisco Certified Network Associate Wireless	Associate-level knowledge and skills required in Cisco wireless networks. Includes comprehensive hands-on labs to design, plan, implement, operate, secure, and troubleshoot wireless networks.	Prerequisites: A grade of C or better in CNT170AA or permission of Instructor.	L+L 4.0 6.0 6.0
CNT220	CCNP SWITCH: Implementing Cisco IP Switching	Development of knowledge and skills in building, monitoring, and maintaining switching in converged enterprise networks using advanced and multi-layer switching technologies. Planning, configuring, securing and verifying the implementation of complex enterprise switching solutions. Hands-on learning and practice to reinforce configuration skills.	Prerequisites: A grade of C or better in CNT160AB, or CCNA industry certification, or permission of Instructor. Corequisites: CNT200.	L+L 4.0 6.0 6.0



CNT231	CCNP TSHOOT: Maintaining and Troubleshooting Cisco IP Networks	Development of knowledge and skills in monitoring and maintaining complex enterprise routed and switched Internet Protocol (IP) networks. Skills learned include the planning and execution of regular network maintenance, as well as support and troubleshooting using technology-based processes and best practices, in a systematic approach. Extensive labs emphasize hands-on learning and practice to reinforce configuration skills.	Prerequisites: A grade of C or better in (CNT200 and CNT220), or permission of Instructor.	L+L 4.0 6.0 6.0
CNT240	Cisco Certified Network Professional: Enterprise Core	Provides Cisco Certified Network Professional (CCNP) Enterprise knowledge and skills needed for professional-level networking technologies and architecture. Topics include virtualization, network assurance, security, and automation. Helps to prepare students to take the Cisco Enterprise Network Core Technologies (ENCOR) certification exam aligned with the CCNP Enterprise, CCIE Enterprise Infrastructure, CCIE Enterprise Wireless, and Cisco Certified Specialist - Enterprise core certifications.	Prerequisites: A grade of C or better in CNT160AB, or Cisco Certified Network Associate (CCNA) industry certification, or permission of Instructor.	L+L 8.0 12.0 12.0
CNT240AA	Cisco Certified Network Professional: Enterprise Core I	Provides Cisco Certified Network Professional (CCNP) Enterprise knowledge and skills needed for professional-level networking technologies and architecture. Topics include virtualization, network assurance, security, and automation. Helps to prepare students to take the Cisco Enterprise Network Core Technologies (ENCOR) certification exam aligned with the CCNP Enterprise, CCIE Enterprise Infrastructure, CCIE Enterprise Wireless, and Cisco Certified Specialist - Enterprise core certifications.	Prerequisites: A grade of C or better in CNT160AB, or Cisco Certified Network Associate (CCNA) industry certification, or permission of Instructor.	L+L 4.0 6.0 6.0

CNT240AB	Cisco Certified Network Professional: Enterprise Core II	Provides Cisco Certified Network Professional (CCNP) Enterprise knowledge and skills needed for professional-level networking technologies and architecture. Topics include virtualization, network assurance, security, and automation. Helps to prepare students to take the Cisco Enterprise Network Core Technologies (ENCOR) certification exam aligned with the CCNP Enterprise, CCIE Enterprise Infrastructure, CCIE Enterprise Wireless, and Cisco Certified Specialist - Enterprise core certifications.	Prerequisites: A grade of C or better in CNT240AA.	L+L 4.0 6.0 6.0
CNT250	Cisco Certified Network Professional: Enterprise Advanced Routing and Services	Provides Cisco Certified Network Professional (CCNP) Enterprise advanced knowledge and skills needed for professional-level networking technologies and architecture. Covers the implementation and troubleshooting of advanced routing technologies and services including Layer 3 VPN services, infrastructure security, and infrastructure services. Helps to prepare students to take the Implementing Cisco Enterprise Network Advanced Routing and Services (ENARSI) certification exam aligned with the CCNP Enterprise, Cisco Certified Specialist - Advanced Infrastructure Implementation certifications.	Prerequisites: A grade of C or better in CNT160AB, or Cisco Certified Network Associate (CCNA) industry certification, or permission of Instructor.	L+L 8.0 12.0 12.0

CNT250AA	Cisco Certified Network Professional: Enterprise Advanced Routing and Services I	Provides Cisco Certified Network Professional (CCNP) Enterprise advanced knowledge and skills needed for professional-level networking technologies and architecture. Covers the implementation and troubleshooting of advanced routing technologies and services including Layer 3 VPN services, infrastructure security, and infrastructure services. Helps to prepare students to take the Implementing Cisco Enterprise Network Advanced Routing and Services (ENARSI) certification exam aligned with the CCNP Enterprise, Cisco Certified Specialist - Advanced Infrastructure Implementation certifications.	Prerequisites: A grade of C or better in CNT160AB, or Cisco Certified Network Associate (CCNA) industry certification, or permission of Instructor.	L+L 4.0 6.0 6.0
CNT250AB	Cisco Certified Network Professional: Enterprise Advanced Routing and Services II	Provides Cisco Certified Network Professional (CCNP) Enterprise advanced knowledge and skills needed for professional-level networking technologies and architecture. Covers the implementation and troubleshooting of advanced routing technologies and services including Layer 3 VPN services, infrastructure security, and infrastructure services. Helps to prepare students to take the Implementing Cisco Enterprise Network Advanced Routing and Services (ENARSI) certification exam aligned with the CCNP Enterprise, Cisco Certified Specialist - Advanced Infrastructure Implementation certifications.	Prerequisites: A grade of C or better in CNT250AA.	L+L 8.0 6.0 6.0
COM080	Conversation Circles	Practice in conversing in English for non-native speakers. Emphasis in developing conversational techniques to facilitate building and maintaining relationships.	Prerequisites: None.	LEC 3.0 3.0 3.0

COM095	Basic Oral Communication Skills	Listening, speaking, and related academic performance skills, including note taking. Emphasis on activities designed to improve and synthesize these skills	Prerequisites: None.	LEC 3.0 3.0 3.0
COM100	Introduction to Human Communication	Introduces the theory and practice of human communication. Surveys communication topics related to interpersonal, small group, and public communication.	Prerequisites: None.	LEC 3.0 3.0 3.0
COM100AA	Introduction to Human Communication Part I	Introduces the theory and practice of human communication. Surveys communication topics related to interpersonal, small group, and public communication.	Prerequisites: None.	LEC 1 1 1
COM100AB	Introduction to Human Communication Part II	Introduces the theory and practice of human communication. Surveys communication topics related to interpersonal, small group, and public communication.	Prerequisites: None.	LEC 1 1 1
COM100AC	Introduction to Human Communication Part III	Introduces the theory and practice of human communication. Surveys communication topics related to interpersonal, small group, and public communication.	Prerequisites: None.	LEC 1 1 1
COM101	Interpersonal Communication in the Workplace	Elements and functions of communication; perception of self and others; verbal and nonverbal communication; listening skills; effective verbal responses; communicating ideas and feelings; role of communication in relationships with others	Prerequisites: None.	LEC 1.0 1.0 1.0
COM102	Group Discussion in the Workplace	Concept of a decision-making group; role requirements in group discussion; characteristics and responsibilities of small-group leaders; tools for problem solving in a group; presenting proposals to management	Prerequisites: None.	LEC 1.0 1.0 1.0

COM105	Relational Communication/ Senior Adults	Communication skills as they apply to personal relationships of older adults. Student's assessment of their individual communication skills in relations with family members, social and business acquaintances, and friends	Prerequisites: None.	LEC 1.0 1.0 1.0
COM110	Interpersonal Communication	Theory and practice of communication skills which affect day-to-day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships	Prerequisites: None.	LEC 3.0 3.0 3.0
COM110AA	Interpersonal Communication Part I	Theory and practice of communication skills which affect day-to- day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships	Prerequisites: None.	LEC 1.0 1.0 1.0
COM110AB	Interpersonal Communication Part II	Theory and practice of communication skills which affect day-to- day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships	Prerequisites: None.	LEC 1.0 1.0 1.0
COM110AC	Interpersonal Communication Part III	Theory and practice of communication skills which affect day-to-day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships	Prerequisites: None.	LEC 1.0 1.0 1.0

COM120	Pronunciation of American Speech	Analysis of American speech production problems due to accents produced by another language, correction of misarticulated American speech sounds, critical listening to sound production, understanding American English speech patterns, practicing American idioms and expressions, and preparing and delivering group and individual speech presentations	Prerequisites: None.	LEC 3.0 3.0 3.0
COM125	Presentational Speaking	Techniques for developing oral presentations which include visual media. Principles of verbal message development and related visual design stressed. Techniques of managing the presentational environment including question and answer periods and the operation of common equipment	Prerequisites: None.	LEC 3.0 3.0 3.0
COM145	Digital Storybook	Enables students to find and develop a narrative representing an aspect of their personal histories. Use of digital technology to produce and archive a storybook	Prerequisites: None.	L+L 1.0 2.0 2.0
COM150	Digital Storytelling	Enables students to find and develop their personal stories. Emphasis on the use of digital technology to create, edit, produce and archive a digital story	Prerequisites: None.	L+L 3.0 6.0 6.0
COM163	Intercultural Communication in Everyday Life	Provides knowledge to promote greater understanding and application of intercultural communication in social and organizational interactions. For advanced non-native English speakers	Appropriate English placement test score at the ENG101 or ENG107 level or a grade of C or better in ENG091 or ESL097 or permission of Instructor.	LEC 3.0 3.0 3.0
COM177	Experiential Group Activities Facilitation	Communication skills, tools, and strategies used to lead experiential learning activities. Designed to enhance the student's ability to facilitate experiential group learning activities.	Prerequisites: None.	LEC 3.0 3.0 3.0

COM181	Conflict Mediation	Develop communication skills necessary to conduct mediation in formal and informal settings. Applies principles and theories of message production and responding, listening, questioning, source and receiver factors, and emotion to conflict management communication. Emphasis on respecting diversity and empowering joint problem solving throughout	Prerequisites: None.	LEC 3.0 3.0 3.0
COM207	Introduction to Communication Inquiry	Overview of theory and methodological practice in communication with particular attention to scholarly writing skills. Emphasis on development of critical thinking skills through active participation in the research process.	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent and COM100 or equivalent or permission of Instructor.	LEC 3.0 3.0 3.0
COM215	Listening	Emphasis on diagnosis of individual listening, corrective procedures, and reinforcement of improved habits through normal and speeded listening drills. Includes everyday communication experiences	Prerequisites: None.	LEC 3.0 3.0 3.0
COM221	Oral Fluency in American Speech	Designed for English Language Learner (ELL) students to develop greater oral fluency in spontaneous speaking contexts and presentational speaking. Emphasis on development of speech, language, and vocal clarity; basic skills in presentational speaking; and use of English to interact spontaneously with others.	Prerequisites: A grade of C or better in COM120 or permission of Instructor.	LEC 3.0 3.0 3.0
COM222	Argumentation	Discussion and practice of the use of evidence, applied reasoning, recognition of fallacies, selection of arguments, and methods of analyzing issues	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
COM225	Public Speaking	Designed to enhance the student's ability to present public speeches confidently and competently. Also designed to improve information literacy and critical thinking skills	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0

COM230	Small Group Communication	Principles and processes of small groups and development of skills for participation and leadership in small group settings. Practice in problem solving, decision making, and information sharing.	Prerequisites: None.	LEC 3.0 3.0 3.0
COM241	Oral Interpretation of Literature	The study, analysis, and preparation for performance of prose, poetry, and dramatic literature. Preparation of material for public audiences.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
COM250	Introduction to Organizational Communication	Introduction to the study of communication in organizations including identification of variables, roles and patterns influencing communication in organizations	Prerequisites: None.	LEC 3.0 3.0 3.0
COM251	Interviewing	Principles and techniques of interviewing, including practice through real and simulated interviews in informational, persuasive, and employee-related situations	Prerequisites: None.	LEC 3.0 3.0 3.0
COM259	Communication in Business and Professions	Interpersonal, organizational, intercultural, group, and public communication in business and professional organizations. Emphasis on oral communication and the effective use of technology and new media.	Prerequisites: A grade of C or better in ENG101, or ENG107, or equivalent.	LEC 3.0 3.0 3.0
COM263	Elements of Intercultural Communication	Diverse cultural contexts are explored through basic concepts, principles, and theories of intercultural communication. Discovering effective interaction and appropriate communication in a global community is emphasized.	Prerequisites: None.	LEC 3.0 3.0 3.0
COM270	Health Communication	Theory and practice of interpersonal, intercultural, public, and team communication skills in a healthcare setting.	Prerequisites: None.	LEC 3.0 3.0 3.0
COM271	Voice and Diction	Exercises and techniques to free the voice and improve projection, resonance, and articulation. Covers international phonetic alphabet and standard stage speech	Prerequisites: None.	LEC 3.0 3.0 3.0



COM275	Nonverbal Communication	Effects of space, time, body movements, environment, objects, and voice quality on human communication and interaction	Prerequisites: None.	LEC 3.0 3.0 3.0
COM277	Group Facilitation Theory and Practice	Theory and practice of group facilitation skills. Emphasis on leading organizational groups in problem solving and decision-making	Associates degree or equivalent or 3 to 5 years work experience or permission of Instructor.	LEC 2.0 2.0 2.0
COM281	Communication Activities	Designed to provide students with competence and confidence in a variety of speech situations beyond the classroom setting. May include presentations at speech competitions or at community organizations.	Prerequisites: None.	L+L 1.0 3.0 3.0
COM281AA	Communication Activities	Designed to provide students with competence and confidence in a variety of speech situations beyond the classroom setting. May include presentations at speech competitions or at community organizations.	Prerequisites: None.	L+L 2.0 4.0 4.0
COM281AB	Communication Activities	Designed to provide students with competence and confidence in a variety of speech situations beyond the classroom setting. May include presentations at speech competitions or at community organizations.	Prerequisites: None.	L+L 3.0 5.0 5.0
COM282AA	Service-Learning Experience in Communication	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
COM282AB	Service-Learning Experience in Communication	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
COM282AC	Service-Learning Experience in Communication	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

COM296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
COM296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
COM296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

COM296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
COM298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
COM298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

COM298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CON100	Introduction to Construction	Introduces students to all aspects of the construction industry such as how projects are delivered, reviewing the procurement process and how they are estimated, scheduled, and contracted. Introduces students to the individual roles that constructors fill in the delivery of a construction project.	Prerequisites: None.	LEC 2.0 2.0 2.0
CON101	Construction and Culture	The cultural context of construction, emphasizing the evolution and expansion of constructed environments as expressions of ethical and historical value systems.	Prerequisites: None.	LEC 3.0 3.0 3.0
CON103	Foundation of Construction Safety	Occupational Safety and Health Act (OSHA). Common causes for accidents and fatalities in construction. Abatement techniques for construction-specific hazards. Use of personal protection and lifesaving equipment. Specific types of health hazards related to the construction industry. Proper methods for handling hazardous materials.	Prerequisites: None.	L+L 1.0 1.0 1.0

CON104	Hand and Power Tools, Equipment, and Workspace	Overview of the selection, use, maintenance and safety procedures for common hand tools, power tools and equipment used in the construction industry. Overview of the maintenance of workspace according to professional standards.	Prerequisites: None.	L+L 1.5 1.5 1.5
CON105	Construction Calculations	Introduction to basic calculation skills in the construction environment including the four primary operations, United States standard and metric units of measure, geometric figures, area and volume calculations for two and three-dimensional objects. Overview of the use, maintenance, and safety procedures for common hand and power tools.	Prerequisites: None.	L+L 1.5 1.5 1.5
CON106	Foundations of Concrete	Examines the effects of concrete-making materials (aggregates, cements, admixtures, etc.) on the properties of fresh and hardened concrete. Concrete mixture proportioning is discussed along with the calculations and statistical analysis of strength testing.	Prerequisites: None.	LEC 4.0 2.0 2.0 LAB 0.0 4.0 4.0
CON107	Construction Drawings Introduction	Provides students with the information and skills needed to read and understand construction drawings.	Prerequisites: None.	L+L 1.0 1.0 1.0
CON110	Carpentry: Floor Systems	Emphasis on the layout and construction procedures for floor systems, including: interpretation of construction drawings and specifications; selection of appropriate types of floor system components; and application of floor system materials. Includes estimation of the amount of materials needed for a floor assembly and some common alternative floor systems.	Prerequisites: None.	L+L 3.0 4.0 4.0

CON111	Carpentry: Wall Systems	Examines the layout and construction procedures for wall systems, including: interpretation of construction drawings and specifications; selection of appropriate types of wall system components; and application of wall system materials. Emphasis of the estimation of the amount of materials needed for a wall assembly and some common alternative wall systems.	Prerequisites: None.	L+L 3.5 4.0 4.0
CON112	Carpentry Ceiling Joist and Roof Framing	Covers the layout and construction procedures for roof systems, including interpretation of construction drawings and specifications. Provides an overview of ceiling and roof construction methods, the different types of roofs used in residential construction, materials, estimation of materials, and the use of trusses in basic roof framing.	Prerequisites: None.	L+L 4.5 5.0 5.0
CON117	Interpersonal Skills, Issues and Resolutions in Construction	Information about communication and human relations skills, the expectations of today's diverse workforce, and relationships with stakeholders. Leadership style, interview techniques, and professional development plans. Management skills in problem solving and negotiating.	Prerequisites: None.	LEC 2.0 2.0 2.0
CON124	Plumbing: Pipes and Fittings	Introduces the various types of plumbing materials, pipe schedules and material properties, and applications of piping. Trainees will learn how to determine the appropriate types of fittings, valves, hangers, and supports needed for piping jobs. Trainees will learn to properly measure, cut, prep, and join piping.	Prerequisites: None.	L+L 3.5 4.0 4.0

CON125	Plumbing: Fixtures	Introduces commonly used fixtures in plumbing systems. Select and operate each type of fixture for a variety of installations. Provides an overview of plumbing system installation, maintenance and water heating systems.	Prerequisites: None.	L+L 2.0 3.0 3.0
CON126	Plumbing: Drain, Waste, and Vent	Examine the drainage, waste movement and ventilation for construction application. Provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system.	Prerequisites: None.	L+L 3.5 4.0 4.0
CON127	Plumbing: Water Distribution Systems	Discuss the processes through which potable water is distributed. Examine the identification of the components and functions of a water distribution system and explains the relationships among the components. Includes installation and testing of water distribution systems.	Prerequisites: None.	L+L 2.0 3.0 3.0
CON130	Computer Aided Design and Drafting	Fundamental drafting and documentation topics and techniques related to construction, using both board and computer as tools. Concentration on various methods of two-dimensional and three-dimensional drawing, sketching, scaling, and dimensioning with computer and board.	Prerequisites: None.	L+L 3.0 6.0 6.0
CON131	Electrical Systems	Electricity related to residential and light commercial applications, to include common electrical components, AC and DC circuits, and electrical safety. Provides an introduction to reading, interpreting, and creating wiring diagrams and the application of electrical power. Operation and use of specific meters, tools, and an introduction to National Electrical Code (NEC).	Prerequisites: None.	L+L 3.5 4.0 4.0

CON132	Distribution Panels, Wiring, and Circuit Protection in Electrical Systems	Discuss construction drawings and code related to conductors and cables (types, ratings), residential and commercial applications, wire sizes, utilities, meters, disconnects, breakers, grounding and bonding, rough-in wiring and circuit safety protection.	Prerequisites: None.	L+L 3.5 4.0 4.0
CON133	Conduit, Raceways, and Termination in Electrical Systems	Termination and implementation of electricity in a facility. Considers topics related to box capacities, raceways, conduit sizes, termination practices, wire trays, and finish wiring.	Prerequisites: None.	L+L 4.0 5.0 5.0
CON138	Introduction to Project Management and Resource Control	Technical and management skills such as preconstruction planning, cost and risk control and policy development. Criteria for project layout purchasing, subcontractor management, project layout. Preparation process for project start up, close out and alternate project delivery methods. Major factors which affect production control and production control standards. Project manager's role.	Prerequisites: None.	LEC 1.0 1.0 1.0
CON140	Construction Scheduling and Time Management	Fundamental training in scheduling, including listing and sequencing, bar charts, network diagrams and methods of managing resources. Importance of formal schedules, job planning, and establishing priorities and alternative scheduling methods.	Prerequisites: None.	LEC 1.0 1.0 1.0
CON181	Cost Estimating	Determining quantities of material, equipment, and labor for a construction project. Includes procedures used to apply unit costs to these items in a minimum of time. Occupational Safety and Health Administration Safety Standards and their impact on construction cost.	Prerequisites: None.	LEC 3.0 3.0 3.0



CON213	Carpentry: Steel Framing	The layout and construction procedures for steel framing, including: interpretation of construction drawings and specifications; selection of appropriate types of steel framing components; and application of materials. Includes estimation of the amount of materials needed for a steel assembly.	Prerequisites: None.	L+L 1.0 2.0 2.0
CON214	Carpentry: Roof Systems and Building Envelopes	Safety, codes, and construction procedures for roof systems and building envelopes, including interpretation of construction drawings and specifications. Students construct conventional roof structures and ceilings, and install exterior finish materials.	Prerequisites: None.	L+L 3.0 4.0 4.0
CON215	Carpentry: Interior Finishes	The layout and construction procedures for interior finishes such as: drywall, trim, doors, cabinetry and stairs, including interpretation of construction drawings and specifications. Provides an overview of construction methods, the different types of materials, and estimation of materials.	Prerequisites: None.	L+L 4.0 5.0 5.0
CON216	Carpentry: Concrete Forms	Safety, codes, and construction procedures for layout and construction of concrete footers and post-tensioned slabs, wall forms, and columns. Includes interpretation of construction drawings and estimation of materials.	Prerequisites: None.	L+L 3.0 4.0 4.0
CON221	Applied Statics	Emphasis on response of bodies to the action of forces. Elementary analytical and practical approach to the principles and physical concepts of statics, focuses on mastery of basic principles of trigonometry, application of vectors and forces, and moments, with analysis of basic structures and structural components, trusses, shear and moment diagrams, centroids, and moments of inertia.	Prerequisites: None.	LEC 3.0 3.0 3.0

CON223	Strength of Materials	Strength and application of materials of construction, including mechanics of beams, shafts, and bolted and welded connections under various loading conditions. Construction behavior of various materials externally and internally.	Prerequisites: None.	LEC 3.0 3.0 3.0
CON224	Plumbing: Pipe Systems and Controls	Examines applied calculations to determine size, types and service of pipe systems. Discusses the application of drawings, codes, and specifications for assembly and installation of gas, air, and water systems.	Prerequisites: None.	L+L 3.0 4.0 4.0
CON225	Plumbing: Water Disposal Systems	Examines water disposal and drainage systems, to include the types, components, functions, codes, safety, design, installation and repair.	Prerequisites: None.	L+L 4.0 5.0 5.0
CON226	Plumbing: Fixtures and Appliances	Examines the safety, codes, installation, maintenance, and repair of appliances, fixtures, and gas piping.	Prerequisites: None.	L+L 3.0 4.0 4.0
CON227	Plumbing: Water Resource Solutions	Introduces water supply disinfection, filtration systems, and sustainable water practices.	Prerequisites: None.	L+L 2.0 2.0 2.0
CON234	Electric Power Distribution	Theory and applications of distribution of power from utilities to residential and commercial sites, including transformers and commercial electrical distribution equipment and services. Includes safety, codes, and interpretation of construction drawings and specifications.	Prerequisites: None.	L+L 3.0 4.0 4.0
CON235	Motors: Theory and Application	Describes motor and motor controls in electricity. Explains how to select and install relays and troubleshoot control circuits. Distinctions between AC and DC motors, motor speed control, and design and operation characteristics, connections and terminal markings.	Prerequisites: None.	L+L 4.0 5.0 5.0

CON236	Industrial Wiring Applications	A broad variety of electrical wiring applications, including healthcare facility, heating, ventilation and air conditioning (HVAC), standby, emergency, and fire alarm systems.	Prerequisites: None.	L+L 3.0 3.0 3.0
CON241	Surveying I	Fundamental surveying principles including theory and field work using the level and transit, horizontal measurement by tape or stadia, benchmark and profile leveling traverse surveys and computations, establishment of line and grade. Designed to develop semi-professional personnel working for private or government engineering agencies.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
CON243	Heavy Construction Equipment, Methods, and Materials	Fundamentals of machine selection and production estimating, using computer-generated data to develop programs that speed the decision process or allow easy analysis of multiple options used in the heavy construction industry. Applications of engineering principles in analyzing economical approaches for heavy construction. Covers fleet operation, methods, maintenance, and programs for construction of dams, tunnels, roads, and excavations of buildings.	Prerequisites: None.	LEC 3.0 3.0 3.0
CON244	Working Drawing Analysis: Blueprint Reading	Detailed analysis and interpretation of construction drawings (blueprint reading); interpretation of symbols, annotations, conventions, terms of trade; and understanding of drawing, dimensioning, plan organization, and specifications.	Prerequisites: None.	LEC 3.0 3.0 3.0

CON251	Microcomputers for Constructors	Effective application of computers in support of construction management, administration, and technical aspects of the construction industry. Uses of the computer as a problem-solving tool, including multimedia software, information management, and spreadsheet applications in construction.	Prerequisites: None.	LEC 3.0 3.0 3.0
CON252	Building Construction Methods, Materials, and Equipment	Comprehensive study of construction methods, materials, codes, and equipment used in building construction.	Prerequisites: None.	LEC 3.0 3.0 3.0
CON262	Introduction International Residential Code (IRC)	Covers International Residential Code for various trades, including building, mechanical, plumbing and electric, for one and two family residential construction. Preparation for voluntary certification (IRC building inspection).	Prerequisites: None.	LEC 3.0 3.0 3.0
CON263	Building Codes	Designed specifically to acquaint students with safety principles of building construction under the Uniform Building Code, including structural requirements for wood, masonry and concrete, fire resistance of building construction, fire resistant materials, and ratings and occupancy requirements.	Prerequisites: None.	LEC 3.0 3.0 3.0
CON271	Construction Safety	Overview of safety methods and procedures for accident prevention and equipment used by construction workers to maximize field safety during various phases of a construction project, including requirements and regulations for construction safety set by Occupational Safety and Health Administration (OSHA) standards along with biological aspects of construction safety.	Prerequisites: None.	LEC 3.0 3.0 3.0

CON273	Electrical Construction Fundamentals	General knowledge of electrical work related to construction management, administration, and technical aspects of the construction industry. Covers circuits and machinery, power transmission, and electrical distribution with emphasis on secondary distribution systems as well as measurement and instrumentation, Ohm's Law, low voltage, high voltage, temporary power, generators, service, systems, circuits, motors, transformers, electrical installations, codes, cogeneration, energy conservation, estimating, safety and related blueprint readings.	Prerequisites: None.	LEC 3.0 3.0 3.0
CON290AA	Construction Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. Eighty (80) hours of designated work experience.	Prerequisites: Permission of Department or Division.	LAB 1.0 6.0 0.0
CON290AB	Construction Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience.	Prerequisites: Permission of Department or Division.	LAB 2.0 12.0 0.0
CON290AC	Construction Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. Two hundred and forty (240) hours of designated work.	Prerequisites: Permission of Department or Division.	LAB 3.0 18.0 0.0
CON298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

CON298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CON298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
COR101	Core: Introduction to Craft Skills	This National Center for Construction Education and Research (NCCER) core curriculum is a prerequisite to all other level 1 craft curriculum. Its modules cover basic safety, communication skills, introduction to construction drawings and math, hand/power tools, employability skills, and material handling.	Prerequisites: None.	80
COS104	Hair Essentials I	Introduction to the basic theory and procedures in cosmetology hair essentials.	Prerequisite: Program admission.	200
COS106	Hair Essentials II	Hair-shaping techniques and chemical application procedures in cosmetology hair essentials.	Prerequisites: COS104 or Program Manager's permission.	200
COS112	Hair Essentials	Introduction to the basic theory and procedures in cosmetology hair essentials.	Prerequisites: Admission into the Cosmetologist program.	400

COS114	Student Salon 1	Continuation of cosmetology theory and practical concepts at an intermediate level. Theory will be focusing on professional development, salon ecology, anatomy and hair decisions. Practical skills will be demonstrated daily on clients and manikins. Rubrics on procedures are done monthly. One day a month on Arizona state board licensure focus.	Prerequisites: COS112 or Program Manager's permission.	200
COS116	Student Salon 2	Apply concepts learned in the classroom and the student salon to develop real life scenarios while servicing a client and/or becoming a future business owner in the beauty industry.	Prerequisites: COS114 or Program Manager's permission.	200
COS118	Hair Stylist State Licensure Focus	This course is designed to prepare students for the written and practical examinations for the Arizona State Board of Cosmetology HAIRSTYLIST licensure only.	Prerequisites: COS116 or Program Manager's permission.	200
COS119	Nail Essentials	Introduction to nail services in the beauty industry.	Prerequisites: COS116 or Program Manager's permission.	200
COS212	Skin Essentials	Introduction to skin services in the beauty industry.	Prerequisites: COS119 or Program Manager's permission.	200
COS214	Student Salon 3	Prepares cosmetology students to be industry ready and prepared to perform services in their chosen field of expertise after licensure with the Arizona State Board of Cosmetology.	Prerequisites: COS212 or Program Manager's permission.	200
COS218	Cosmetology State Licensure Focus	This course is designed to prepare cosmetology students for the written and practical examinations for Arizona State Board of Cosmetology licensure.	Prerequisites: COS214 or Program Manager's permission.	200
COS250	Instructor in Training Orientation	Students will be introduced to the Arizona State Board of Cosmetology instructor safety and sanitation, rules and regulations. This class is to prepare a student to become an instructor in their licensed field.	Prerequisites: Arizona State Board of Cosmetology licensure.	80

COS251	Instructor in Training I	Students will train to become an instructor in their certified field of cosmetology or aesthetics. Students will learn the fundamentals of becoming an instructor by completing assigned work, shadowing instructors, creating lesson plans, coaching students and working hands-on with students and clients.	Prerequisites: COS250.	135
COS252	Instructor in Training II	Students will continue to train to become an instructor in their certified field of cosmetology or aesthetics. Student will learn the fundamentals of becoming an instructor by completing assigned work, shadowing instructors, creating lesson plans, coaching students and working hands-on with students and clients. State board preparation for licensing.	Prerequisites: COS251.	135
COV110	The Seven Habits of Highly Effective People	Development of interpersonal habits that are used by successful people in their personal and professional lives. Seven Habits of Highly Effective People. Video-based lecture course.	Prerequisites: None.	LEC 2.0 2.0 2.0
COV112	Great Leaders, Great Teams, Great Results	Overview of foundational characteristics of great teams and organizations. Process oriented approach to creating strategies for inspiring trust and building credibility, defining a purpose, aligning systems of success, and unleashing talents of teams.	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD096	Personal Success in College	Student attitudes, behaviors, and skills required for success in college. Includes an overview of instructional strategies commonly used in college classrooms, use of resources, and identification of obstacles to academic progress, and to effective communication	Prerequisites: None.	LEC 2.0 2.0 2.0



CPD100	Orientation for Student Development	Offered to orient new students to college life. Emphasis on assessing students' academic potential, facilitating curricular advisement and registration procedures, learning academic survival skills, and becoming aware of all services available to students on campus and in the community	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD101	Personal Development	Designed to assist students in developing confidence in making personal, social, and educational decisions. Examination and assessment of individual needs, interests, abilities and values to develop and strengthen interpersonal communication, enhance transitional skills and identify realistic life planning goals	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AA	Assertiveness Training	Designed to help students, differentiate assertive, non-assertive and aggressive behavior, overcome blocks to acting assertively, establish boundaries, and develop effective verbal and nonverbal assertive behavior. Group discussion, role playing, and videotape feedback are used to enable students to express feelings, beliefs, and opinions in a direct appropriate manner	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AB	Career Exploration	Designed to assist students make informed career decisions. Focuses on current occupational trends and outlook. Explores career-related interests, values, needs, preferences, skills, and strengths with the use of various assessments. Aids in the development of individualized educational/career goals and action plan.	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AC	Creative Job Hunting	Assists students in gaining skills and confidence necessary to compete in the job market. Emphasis on job search techniques and strategies, resume and cover letter writing, interviewing skills and professional etiquette.	Prerequisites: None.	LEC 2.0 2.0 2.0

CPD102AD	Growth and Transformation Strategies	Designed to help students adopt a growth mindset within a holistic framework in order to transform patterns that prevent them from achieving their goals.	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AF	Human Sexuality	Enables students to view gender and sexuality as dimensions of personal identity, and explores intersectionality between multiple identities. Examination of differences between identify expression, behavior, and biological influences, tracing social evolution from masculine-feminine dichotomy to non-binary perspectives.	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AH	Stress Management	Reviews the sources of stress, the physiological effects and the psychological impact of stress on the individual. Provides strategies to manage and reduce stress. Helps students develop and understand behaviors to create a healthy balance in their lives by studying the biological, psychological, physiological, and social aspects of stress and wellness.	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AJ	Personal Spiritual Development	Designed to encourage exploration of human spirituality. Focus on personal values and individual belief systems. Emphasis on developing an integrated concept of spirituality and applying it to one's own life	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AN	Anger Management	Provides an understanding of the emotion of anger, explores the types, origins and typical reactions to anger. Covers stress and the need for stress management in relation to anger. Examines personal anger patterns and feelings, and the use of effective interpersonal communications in effective anger management	Prerequisites: None.	LEC 2.0 2.0 2.0

CPD102AR	Relaxation Training	Emphasis on specific relaxation techniques to alleviate dysfunctional tension. Use of progressive relaxation methods to reduce stress. Discussion of other modalities of relaxation	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
CPD102AS	Conflict Resolution	Developing new skills for dealing effectively with everyday conflict and improving quality of one's own life. Opportunity to discuss issues and seek cooperative resolutions	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AT	Building Self-Esteem	Practice in specific methods for building and keeping self-esteem. Personal assessment of attitudes, values, support systems, and goals	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD102AU	Introduction to Meditation: Vipassana Practice	Introduction to the practice of Vipassana (Insight) Meditation. Focus on the history, benefits and methodology of Vipassana meditation. Special emphasis on establishing a formal and informal meditation practice	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD103BA	Women In Transition	Designed to assist and support women who are experiencing life transitions. Emphasis on assessing self-potential, increasing self-confidence, managing life change, and exploring education/career/life options in terms of the realities of roles for women today	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BB	Men in Transition	Designed to assist men who are experiencing life transitions. Emphasis on assessing potential, increasing self-confidence, managing change, exploring educational/career options, and exploring mens' roles in a changing society	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BC	African American Cultural Pride and Awareness	Develop an awareness of cultural roots, history, and traditions with emphasis on the shaping of personal identity, social, career, and educational decisions	Prerequisites: None.	LEC 2.0 2.0 2.0

CPD103BD	Latino/Hispanic American Pride and Awareness	Develop an awareness of cultural roots, history, and traditions with emphasis on the shaping of personal identity, social, career, and educational decisions	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BE	Native American Cultural Pride and Awareness	Develop an awareness of cultural roots, history, and traditions with emphasis on the shaping of personal identity, social, career, and educational decisions	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BG	Asian American Cultural Pride and Awareness	Develop an awareness of cultural roots, history, and traditions with emphasis on the shaping of personal identity, social, career, and educational decisions	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BH	Male-Female Communication	Designed to provide students with a better understanding of male-female characteristics and how that along with a renewed emphasis on basic communication skills will improve communication between the sexes	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BJ	Dynamic Parenting	Designed to provide students with an understanding of parenting dynamics and effective communication between parents and children. Emphasis on building self-esteem, developing coping skills, behavior modification, and other techniques for improving parenting and communication in a variety of circumstances	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BL	Dynamics of Leadership	Designed to provide strategies that may be used when assuming leadership roles. Focus on improving self-confidence through the development of appropriate behaviors, problem-solving skills, and techniques of leadership.	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD103BV	Personal Development for Military Veterans	Assist military veterans in examining role changes, values, strengths, resources, career, readjustment and lifestyle choices. Strategies for coping with life changes, stress, and other personal development needs in transitioning into civilian life	Prerequisites: None.	LEC 2.0 2.0 2.0

CPD104	Career and Personal Development	An overview of the holistic process of career/life planning through self-awareness and understanding of the world of work. Exploration and application of behavioral, social, and cultural factors leading to college, career, and personal success with emphasis on assessment, applied behavior management, motivation, self-care, and career development.	Prerequisites: None.	LEC 3.0 3.0 3.0
CPD108	Personal Money Management for College Students	Designed to assist students in examining values related to spending, borrowing and saving money. Identify financial priorities and responsibilities associated with debt. Develop and follow a personal budget plan and learn strategies for maintaining a financially balanced personal life	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD110	Assessment and Planning for University Transfer	Designed for "undecided" students planning to transfer to a university. Assessment of individual needs, priorities, interests and abilities. Investigates university options to assist transfer-oriented students in selecting a major and specific university programs best suited to their needs	Prerequisites: None.	LEC 2.0 2.0 2.0
CPD115	Creating College Success	Strategies to create success in college. Methods for selecting and developing effective academic strategies, increasing self-awareness and developing self-management strategies. Elements of college resources and relationships with others explored in support of students' educational experience	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD120	Introduction to Counseling	Introduction to the field of counseling with a focus on skills and competencies needed as a mental health practitioner. Foundations of counseling including counseling theories, ethical considerations, prevention and intervention topics, and multicultural counseling practices.	Prerequisites: None.	LEC 3.0 3.0 3.0

CPD125	Employee Development: Problem Solving/Decision Making	Development of decision-making skills as well as techniques for problem solving. Focus on values and value conflicts as related to decision-making. Also includes establishing short and long-term goals for personal and career development	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD126	Writing Resumes	Planning, organizing, and writing a professional resume. Focus on presentation skills including format and language	Prerequisites: None.	L+L 1.0 1.7 1.7
CPD150	Strategies for College Success	Focus on increasing student success through college orientation and personal growth, study skills development, and educational and career planning.	Prerequisites: None.	LEC 3.0 3.0 3.0
CPD150AA	College Orientation and Personal Growth	Emphasis on increasing student success through college orientation, identification of learning style and the use of time management, goal-setting, and interpersonal communication strategies	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD150AB	Study Skills Development	Emphasis on increasing student success through the use of study strategies including materials organization, note-taking, reading, test-taking, memory, and critical and creative thinking	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD150AC	Educational and Career Planning	Emphasis on increasing student success through educational and career planning.	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD160	Introduction to Multiculturalism	Examination of the multiple cultures and subcultures within the contemporary United States. Personal exploration of awareness and appreciation of multiculturalism. Activities for experiencing diverse cultural perspectives. Critical thinking skills for recognizing, analyzing, and mediating cultural and psychological factors impacting conflict and accord between diverse cultures through written and oral discourse.	Prerequisites: A grade of C or better in ENG101, or ENG107, or permission of Instructor.	LEC 3.0 3.0 3.0

CPD195AA	Special Topics: Counseling and Personal Development	Introduction to current topics and contemporary issues related to promoting and enhancing personal development	Prerequisites: None.	LEC 0.5 0.5 0.5
CPD195AB	Special Topics: Counseling and Personal Development	Introduction to current topics and contemporary issues related to promoting personal development. Focuses on a variety of techniques and strategies to improve personal and interpersonal effectiveness	Prerequisites: None.	LEC 1.0 1.0 1.0
CPD220	The Counselor in a Multicultural Society	Current theories and research on culture, race and ethnicity, gender and other aspects of cultural diversity in a multicultural society through the lens of counseling. Focus on personal perspectives, will explore themes, theories, topics and research related to power, privilege and oppression in the United States as applied to counseling discipline.	Prerequisites: None.	LEC 3.0 3.0 3.0
CPD240	Introduction to Counseling Skills	Introduction to basic skills and techniques used in the counseling field. Focuses on active listening, self-awareness, and other related skills.	Prerequisites: A grade of C or better in CPD120.	L+L 3.0 2.0 2.0
CPD250	Peer Mentor Training	Development and application of beginning skills and knowledge required to establish and maintain effective peer helping relationships in a college setting. Focus on the role, function, and responsibilities of the peer mentor; verbal and nonverbal communication skills; problem solving; and strategies and resources for first-year student success. Includes on-campus service-learning component.	Prerequisites: Completion of 24 credit hours (100-level or above) with a B grade point average or better and permission of Instructor.	L+L 3.0 4.0 4.0

CPD260	Career and Professional Preparation for the Helping Professions	Overview of the process of career and life planning through self-awareness for students interested in helping fields. Focus on current occupational trends and outlook, the learning models of the individual, the world of work, and decision-making. Emphasis on individual application and workplace diversity. Design materials for use in the professional world such as resumes, online presence, career portfolio.	Prerequisite: A grade of C or better in ENG101.	LEC 3.0 3.0 3.0
CPD282AA	Volunteerism for Counseling and PersonalDevelopment: A Service Learning Experience	Service-learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
CPD282AB	Volunteerism for Counseling and PersonalDevelopment: A Service Learning Experience	Service-learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
CPD282AC	Volunteerism for Counseling and PersonalDevelopment: A Service Learning Experience	Service-learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
CPD298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



CPD298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CPD298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CPT110	Carpentry: Floor Systems	Course covers the layout and construction procedures for floor systems, including: interpretation of construction drawings and specifications; selection of appropriate types of floor system components; and application of floor system materials. Course also includes estimation of the amount of materials needed for a floor assembly and some common alternative floor systems.	Prerequisites: None.	81

CPT111	Carpentry: Wall Systems	Course covers the layout and construction procedures for wall systems, including: interpretation of construction drawings and specifications; selection of appropriate types of wall system components; and application of wall system materials. Course also includes estimation of the amount of materials needed for a wall assembly and some common alternative wall systems.	Prerequisites: None.	81
CPT112	Carpentry Ceiling Joist and Roof Framing	Covers the layout and construction procedures for roof systems, including interpretation of construction drawings and specifications. Provides an overview of ceiling and roof construction methods, the different types of roofs used in residential construction, materials, estimation of materials, and the use of trusses in basic roof framing.	Prerequisites: None.	102
CPT213	Carpentry: Steel Framing	Course covers the layout and construction procedures for steel framing, including: interpretation of construction drawings and specifications; selection of appropriate types of steel framing components; and application of materials. Course also includes estimation of the amount of materials needed for a steel assembly.	Prerequisites: None.	41
CPT214	Roof Systems and Building Envelopes	Course covers the safety, codes, and construction procedures for roof systems and building envelopes, including interpretation of construction drawings and specifications. Students construct conventional roof structures and ceilings, and install exterior finish materials.	Prerequisites: None.	81

CPT215	Carpentry: Interior Finishes	Course covers the layout and construction procedures for interior finishes such as: drywall, trim, doors, cabinetry and stairs, including interpretation of construction drawings and specifications. Provides an overview of construction methods, the different types of materials, and estimation of materials.	Prerequisites: None.	102
CPT216	Carpentry: Concrete Forms	Course covers the safety, codes, and construction procedures for layout and construction of concrete footers and post-tensioned slabs, wall forms, and columns. Includes interpretation of construction drawings and estimation of materials.	Prerequisites: None.	81
CRA290	Introduction to Clinical Research Associate	Introduction to the Clinical Research Associate (CRA) profession as an advanced career path for clinical research coordinators. Topics include CRA role, career development, study development process, monitoring, training and oversight, and regulations. Effective analysis, synthesis, and evaluation of topics through written discourse.	Prerequisites: Bachelor or higher degree in life/health sciences and permission of Program Director.	LEC 3.0 3.0 3.0
CRA291	Monitoring	Basic monitoring skills and responsibilities required of the Clinical Research Associate (CRA). site selection and Initiation, routine monitoring and close-out visits; audit techniques and preparations; expectations and professionalism; monitoring plans, Standard Operating Procedure (SOP) adherence, training of sites, travel expectations and conduct; sponsor interactions (acting as a liaison); source document verification; review of patient charts; use of electronic systems; monitoring reports and letters; adverse event monitoring and reporting; recruitment and retention.	Prerequisites: A grade of C or better in CRA290.	LEC 4.0 4.0 4.0

CRA293	Clinical Study Development	Introduction to the Clinical Study Development Process and various roles of a Clinical Research Associate (CRA). Roles and responsibilities of in-house CRA versus Field CRA support, timelines of Clinical Study Development, overview of the ABC model, drug versus device study development and national and international considerations.	Prerequisites: A grade of C or better in CRA290.	LEC 3.0 3.0 3.0
CRA295	Ethics and Regulations	Overview of the regulations, guidelines and resources associated with the Clinical Research Associate (CRA) role. Monitoring responsibilities, Code of Federal Regulations, International Conference of Harmonisation (ICH) guidelines, European Directives, Pharmaceutical Research and Manufacturers of America (PhRMA) principles, Food and Drug Administration (FDA) Guidelines for the Monitoring of Clinical Investigations and sponsor responsibilities for conduct of clinical trials and approval.	Prerequisites: A grade of C or better in CRA290.	LEC 3.0 3.0 3.0
CRA297	Clinical Trial Material and Device Accountability	Overview of Clinical Trial Material (CTM) from development and manufacturing to accountability and destruction along with comparable device processes. Roles of a Clinical Research Associate (CRA) relative to Clinical Trial Materials/Devices. Investigational New Drug (IND) applications, good manufacturing practices, importing and exporting of CTMs/devices, packaging and stability, accountability records, destruction requirements and review of regulatory considerations.	Prerequisites: A grade of C or better in CRA290.	LEC 3.0 3.0 3.0

CRE101	College Critical Reading and Critical Thinking	Develop and apply critical thinking skills through critically reading varied and challenging materials. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE101AT	College Critical Reading and Critical Thinking in Applied Technology	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in applied technology. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE101BM	College Critical Reading and Critical Thinking in Business, Entrepreneurialism and Management	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in business, entrepreneurialism and management. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE101BS	College Critical Reading and Critical Thinking in Behavioral Sciences and Human Services	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in behavioral sciences and human services. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0

CRE101CS	College Critical Reading and Critical Thinking in Culture and Society	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in culture and society. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE101CT	College Critical Reading and Critical Thinking in Computer Information Technology	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in computer information technology. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE101ED	College Critical Reading and Critical Thinking in Education	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in education. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE101HS	College Critical Reading and Critical Thinking in Health Sciences	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in health sciences. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0

CRE101SM	College Critical Reading and Critical Thinking in STEM	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in science, technology, engineering, and mathematics (STEM). Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE101VA	College Critical Reading and Critical Thinking in Visual and Performing Arts	Develop and apply critical thinking skills through critically reading varied and challenging materials relevant to current issues in visual and performing arts. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in [(ENG101 or ENG107) and (RDG095 or RDG100 or RDG100LL or RDG111 or RDG112 or RDG113)] or a grade of B or better in ALT100 or an appropriate district placement or permission of Instructor.	LEC 3.0 3.0 3.0
CRE201	Critical Reading and Writing in a Global Society	Critical evaluation of writings of authors from a variety of countries and cultures in order to gain a more global perspective of both universal and contemporary issues. Analysis, synthesis, and evaluation of various contemporary cultural viewpoints through at least two substantial writing and/or speaking tasks.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and (CRE101 or exemption by score on the reading placement test).	LEC 3.0 3.0 3.0
CRE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

CRE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CRE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CRP101	Orientation - Carpentry	Fundamental trade skills, employee-employer roles and responsibilities, and safe work practices needed for entry level performance in the construction industry. Emphasis on attaining standard industry safety credentials, practical experience using construction terminology, math and basic measuring techniques. Training for job site hazard recognition, accident prevention, safe tool and equipment operation.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0



CRP102	Safety/Health Certifications for Carpentry	Awareness of construction hazard communication systems, fall protection, proper tool/equipment operation with an emphasis on individual responsibility for workplace safety and health in carpentry. Exposure to health emergency scenarios and proper selection, inspection, use, and operation of fall protection systems, tools, and powered lift truck equipment.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP102AA	Concrete Formwork: Building Layout	Laying out building lines and establishing elevations from a set of shop drawings. Use of transit level	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP102AB	Concrete Formwork: Residential Footing Form	Layout simple footing forms and starter walls with anchor bolts	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP102AC	Concrete Formwork: Footing Forms and Bolt Layout	Use of the transit level to measure in degrees and minutes on the vernier scale. Building footer forms and setting bolts in six geometric configurations as indicated on shop drawings.	Prerequisites: Registered Apprentice Status or permission of the Apprenticeship Coordinator. CRP102AA suggested but not required.	L+L 1.0 1.5 1.5
CRP102AD	Concrete Formwork: Basic Wall Forms	Building a simple section of wall form using a standard whaler assembly; basic terminology pertaining to concrete wall form construction	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP102AG	Concrete Formwork: Spandrel Beam	Building the section of a spandrel form from shop drawings; basic terminology relating to spandrel beam forms	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP102AH	Concrete Formwork: Deck Forms and Shoring	Building a deck form from shop drawings; placing span-all shoring; basic terminology relating to deck forms and shoring.	Prerequisites: Registered Apprentice Status and a grade of C or better in CRP102AG or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP102AI	Concrete Formwork: Concrete Stair Forms	Building stair forms from shop drawings; basic terminology related to stair form construction	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP102AJ	Concrete Formwork: Tilt-up Construction I	Building a form for a tilt-up slab complete with all necessary inserts and block outs for openings	Registered Apprentice Status and or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5

CRP102AM	Concrete Formwork: Flatwork	Construction of slab forms including radius on grade level with the builder's level or transit	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP102AN	Concrete Formwork: Culverts, Headwall and Wingwalls	Box culvert design, form systems, areas, volumes and pressures. Culvert headwall, side walls and wingwall forms using a single and double whaler assembly. Concrete industry nomenclature.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 2.0 2.0 2.0
CRP102AP	Concrete Formwork: Gang Forms	Building and plumbing a section of gang form using a standard whaler system complete with all the necessary components and hardware	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP103	Tool and Equipment Applications	Selection and use of the proper tools/equipment for various construction applications including preparation of materials. Material calculations to minimize waste and increase productivity. Selection, inspection, use and operations of tools and aerial lifts and scaffold safety.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP103AA	Framing: Basic Wall Framing	Construction of a variety of different wall components including their layout and placement in a simple wall. Use of a framing square in constructing a rake wall	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP103AD	Framing: Floor Joist	Building a supporting section of floor complete with all the necessary components given a set of shop drawings	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP103AE	Framing: Gable Roof	Using the framing square to layout common rafters of a variety of different roof slopes. Figuring the rafter lengths based on information given on the square. Building a section of roof from a given set of plans complete with barge board and all necessary roof framing components	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP103AF	Framing: Hip Roof	Framing a hip roof from a set of shop drawings complete with all the necessary framing components. Using the framing square to determine the length and the cuts of common, hip, and hip jack rafters.	Prerequisites: Registered Apprentice Status and a grade of C or better in CRP103AE or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5

CRP103AG	Framing: Intersecting Roof	Framing an intersecting roof from a set of shop drawings complete with all the necessary framing components. Using the framing square to determine the length and the cuts of common, hip, valley, hip jack, valley jack, and cripple jack rafters.	Prerequisites: Registered Apprentice Status and a grade of C or better in CRP103AF or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP103AI	Framing: Wood Stairs	Building a set of stairs consisting of two flights and a landing from a given set of working drawings	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP103AJ	Framing: Framing Square	Tables, charts, and scales on the framing square; methods of determining brace lengths and angle cuts; step-off method of figuring rafter length; framing components that make up a variety of different roofs; decimal conversion; backing and lowering hip rafter; laying out a rafter given a slope and a span; conversion between pitch and slope; using a speed square	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP103AL	Framing: Advanced Framing Square Application	Building a geometric design consisting of a plate, two hip rafters, and one common rafter from a given set of drawings using the information on the framing square.	Prerequisites: Registered Apprentice Status or permission of the Apprenticeship Coordinator. CRP103AF and CRP103AJ suggested but not required.	L+L 1.0 1.5 1.5
CRP104	Basic Wall Framing	Theory, methods, and procedures required to frame basic walls. Hands-on practice using proper tool techniques and appropriate materials. Introduction to print reading, basic wall layout, plating procedures, framing assembly and bracing.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP104AE	Exterior Finish: Roof Coverings	Covering a small section of roof with three different types of roof coverings: composition shingles, cedar shingles, and shakes	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP105AA	Interior Finish: Standard Door Installation	Installation of a wooden door in a given opening. Fabrication and installation of the jamb and all trim components	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5

CRP105AC	Interior Finish: Running Trim	Building a small frame trimmed out with a variety of moldings according to a set of shop drawings	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP105AG	Interior Finish: Door Hardware	Installation of door hardware including knob, latch, strike plate, hinge butts, and door closer.	Prerequisites: Registered Apprentice Status and a grade of C or better in CRP105AA or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP105AI	Interior Finish: Metal Partitions	Assembling metal partition unit complete with all panels and hardware	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP105AJ	Interior Finish: Soffit Panel	Building a soffit panel with trim and detailed projections as shown on a set of shop drawings	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP106AA	Interior Systems: Metal Frame Walls	Tools, materials, components and erection procedures of metal frame walls and soffits as shown per shop drawings	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP106AB	Interior Systems: Dry Wall Application	Tools, materials and installation procedures for dry wall application.	Prerequisites: Registered Apprentice Status and a grade of C or better in CRP106AA or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP106AH	Interior Systems: Dry Wall Estimation of Material	Reading and interpreting blueprints and shop drawings to estimate the amount of material needed for a dry wall project	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP106AK	Interior Systems: Suspended Lay-In Ceilings	Tools, materials, components, and erection procedures for suspended lay-in ceilings	Registered Apprentice Status or permission of the Apprenticeship Coordinator.	L+L 1.0 1.5 1.5
CRP110AA	Introduction to Carpentry I: History and Tools	History, significance and benefits of labor unions. Successful and efficient labor relations. Carpentry in relation to other construction trades. Building trades organizations. Components of lumber. Hand and power tools used in carpentry	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0

CRP110AB	Introduction to Carpentry II: OSHA Safety	Safe and proper use of hand and power tools. Safe work habits, first aid, and cardiopulmonary resuscitation (CPR) according to Occupational Safety and Health Administration (OSHA) regulations	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP112AA	Technical Calculations for Carpenters I	Integers and whole number processes: addition, subtraction, multiplication, division. Number types, factoring and cancellation. Mathematical functions using fractions, decimals, percentages	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP112AB	Technical Calculations for Carpenters II	Ratios and proportions. Use of plane and solid figure formula for the carpentry trade. Use of English and Metric systems of measurement for the carpentry trade. Graphs used for specific applications	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP112AC	Advanced Calculations for Carpenters	Basic Algebraic skills and operations of fractions. Direct and inverse proportions. Exponential notations, negative integral exponents and formulas. Basic geometry, triangles, and the Pythagorean theorem. Bisecting lines, segments, and bisecting angles. Trigonometric tables and functions of angles. Sines and cosines. Vectors	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP114AA	Blueprint Reading for Carpenters I	Types of blueprints and basic print reading. Symbols for materials. Construction details, standards, and specifications for brick veneer. Steel supports of plans for stores and apartments	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP114AB	Blueprint Reading for Carpenters II	Light frame construction. Specifications and standards used in plans for frame residence. Masonry and steel support roof components of plans for banks. Comprehensive study plans and construction specifications for restaurants	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0

CRP116AA	Concrete Formwork I	Construction and installation techniques. Building site and layout factors. Parts of forms and related hardware. Function of concrete form work in walls, columns, beams, decks and retaining walls. Wall forms and prefabricated walls. Residential foundations	Registered apprentice status or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP116AB	Concrete Formwork II	Construction and installation techniques. Elements of flatwork construction	Prerequisites: A grade of C or better in CRP116AA.	LEC 2.0 2.0 2.0
CRP121	Print Reading for Carpenters	Introduction to print reading skills for carpenters. Developing ability to interpret two-dimensional views, standard drawing methods, pictorial elements, visual and verbal communication cues. Recognizing parts of drawings, locating building and insulation features, calculating dimensions, and using views to determine construction methods.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP122	Bridge Construction	Overview of basic bridge construction including exterior and interior girders, edge forms, bulkheads and hinge forms. Job-built and precast formwork methods, panel construction, assembly and hardware installation tasks. Review of related safety, math and print reading.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP123	Wall Forming	Skills and procedures for forming reinforced concrete walls using single and double waler systems. Characteristics and application of built-in-place, prefabricated and specialty forms, wall forming, calculating layout dimensions and estimating. Overview of wall panel forming reinforcement methods, material preparation and hardware installation.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0

CRP124	Foundations and Flatwork	Design and function of several types of foundations and concrete flatwork. Overview of methods, techniques and procedures for formwork layout, elevation, and construction including jobsite safety, print interpretation, material identification and basic use of builders' level.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP210AA	Basic Framing I	Construction and installation techniques. Floor framing and layout plate for	Registered apprentice status or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP210AB	Basic Framing II	Construction and installation techniques. Factors of weight, stress, tension, and compression. Truss connectors, bracing, and anchors. Gable, gambrel, hip, and shed roofs. Dormers. Intersecting roof. Roof trusses. Exterior deck. Fasteners, and connectors, and foundations	Prerequisites: A grade of C or better in CRP210AA.	LEC 2.0 2.0 2.0
CRP210AC	Commercial Framing I: Panelized Roof	Introduction to roof structure and codes. Materials, tools, layout, and tool safety. Fall protection. Blueprints and detail sheets. Installation, cutting, location of posts, beams, and nailers. Water proofing. Code requirements.	Registered apprenticeship status or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP212AA	Scaffolding for Carpenters	Occupational Safety and Health Administration (OSHA) regulations for system scaffolding. Terminology, assembly procedures, platform safety and access, and dismantling of scaffolding. Scaffolding framework to include braces, tie-ins, and guylines	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP212AB	Level, Transit and Layout	Terminology, types, parts, handling, set up, care, storage, transport, and use of leveling instruments. Leveling rods, leveling operations, vernier scales, linear and angular measurement. Conventional system of measurement. Builder's level and transit level. Simulated fieldwork exercises	Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0

CRP212AC	Rigging	Occupational Safety and Health Administration (OSHA) rigging practices. American National Standards Institute and manufacturer guidelines. Slings, hardware, knots, hitches, splices. Hand and voice signals	Registered apprentice status or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP214AA	Interior Systems: Drywall	History, advantages, and applications of metal framing and drywall. Drywall products and metal framing components for interior partition work. Safe tool use and jobsite safety. Blueprints, specifications, and layout. Standard and special metal framing for partitions. Drywall installation on metal framework. Suspended ceiling systems	Registered Apprentice status with Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP214AB	Interior Systems: Ceilings and Clean Rooms	Ceiling components. Grid, ceiling, and access panels. Cemented and suspended ceilings. Clean room protocol: concepts, contaminants, carriers, classes of clean rooms, and clean room design. Federal Standard 209E: clean air, airborne particulates, and clean zones. Dry in: Levels I, II, III, and IV. Clean room violations.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.	LEC 2.0 2.0 2.0
CRP214AC	Interior Finish: Door Installation and Hardware	Terms, tools, types of doors and door hardware. Installation procedures for doors and door hardware. Fabrication and installation of jam and trip components	Registered apprentice status or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0
CRP214AD	Cabinets and Tops	Fundamentals, terms, tools, safety. Types of wood and glue. Case construction: joints, layout, cutting, assembly. Hardware, plastic laminates, completed cabinets, completed tops. Installation procedures	Registered apprentice status or permission of apprenticeship coordinator.	LEC 2.0 2.0 2.0



CRP231	Basic Roof Framing	Introduction to basic gable roof framing, terminology, characteristics and construction methods. Interpretation of print views and drawing elevations for job planning, rafter systems and layout details. Review of basic rise, run, rafter angles and length calculations.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP232	Stair and Ramp Forming	Methods, procedures and practices used to form stair and ramp structures including configuration and dimensions. Review of Stinger riser and stair thread calculations, state and federal building codes.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP233	Basic Metal Framing	Overview of residential metal framing theory and construction techniques. Interpretation of prints for job planning and estimation of materials. Layout and detail of wall plates, measuring techniques, calculating principles, wall and roof assembly and installation techniques.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP234	Transit Level/Laser	Detailing, layout and construction of abutments used in the heavy highway industry. Overview of assembly components, key terms and abutment anatomy; footings; piers and retaining walls. Techniques for laying out keyway centerline and footing formwork construction.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP241	Gang Forms/Columns	Formwork types, applications and construction methods for gang and column forms using built and manufactured forming systems. Heavy timber gang forms and use of taper ties, bracing, and bulkhead tables.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0

CRP242	Doors/Door Hardware	Installation process for several types of security and exit door hardware. Print interpretation, codes, door schedules, symbols, and hardware recognition.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP243	Scaffold Erector Qualification	Safety and terminology related to scaffold built applications, elevated platform use, span and loading criteria, access and egress, stability, and structural connections and inspections. Project drawing review for locating dimensions, determining layout and scaffold material requirements. Erection/dismantling sequence for the development of job planning, preparation skills and applied math.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP244	Cabinet Installation	Cabinet installation from establishing the design layout to attaching countertops. Print interpretation, job planning, scribing techniques, and proper installation sequence.	Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of apprenticeship coordinator.	L+L 3.0 3.0 3.0
CRP296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

CRP296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
CRP296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
CRP296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

CRP298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CRP298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CRP298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CRW120	Introduction to Writing Children's Literature	Overview of writing children's literature. Emphasis on genres and standards for quality. Development of techniques in reading, evaluating, writing, revising, and editing literature written for children ENH291 suggested but not required	Prerequisites: None, ENH291 suggested but not required.	LEC 3.0 3.0 3.0

CRW141	Focused Topics in Writing: Journaling	Analysis, writing, and revision of genre or elements within journaling.	Prerequisites: None. CRW150 suggested but not required.	LEC 1.0 1.0 1.0
CRW150	Introduction to Creative Writing	Introduction to the basic aesthetics and techniques in contemporary creative writing within a variety of genres. Introduction to the analytical concepts and terminology necessary to understand, interpret, and enact contemporary creative writing. Facilitation of writing practices and evaluation. Introduction to literature's role in society.	Prerequisites: None.	LEC 3.0 3.0 3.0
CRW160	Introduction to Writing Poetry	Prewriting (invention and discovery); writing; analyzing and evaluating (in workshop); and revising to practice manipulating various elements of poetry, critique one's own and the poetry of others, and produce a portfolio of finished, marketable poems .	Prerequisites: None. CRW150 recommended but not required.	LEC 3.0 3.0 3.0
CRW161	Focused Topics in Writing: Poetry	Analysis, writing, and revision of genre or elements within poetry.	Prerequisites: None. CRW150 suggested but not required.	LEC 1.0 1.0 1.0
CRW170	Introduction to Writing Fiction	Practice in writing fiction through a process of prewriting (invention and discovery), writing, analysis and evaluation (in workshop), and revision; practice in manipulating various elements and forms of fiction.	Prerequisites: None. CRW150 recommended but not required.	LEC 3.0 3.0 3.0
CRW171	Focused Topics in Writing: Fiction	Analysis, writing, and revision of genre or elements within fiction.	Prerequisites: None. CRW150 suggested but not required.	LEC 1.0 1.0 1.0
CRW172	Introduction to Comic Book Writing	Introduction to elements and techniques of comic book writing in its specific form; teaches terminology and concepts needed for the successful participation in writing workshops; focuses on proposal outline, planning, structure facilitates writing practice (including character study) and evaluation; offers individual suggestions in the student's development in this genre.	Prerequisites: None.	LEC 3.0 3.0 3.0

CRW176	Writing Narrative for Video Games	Provides an introduction to narrative theory as it relates to video game production. Delivers a variety of video game storylines, narrative theories, and processes for narrative development in video games. Terminology and video game industry standards are covered. Offers discussion of team building and the role of video games in society.	Prerequisites: None.	LEC 3.0 3.0 3.0
CRW180	Introduction to Writing Nonfiction	Practice in writing creative nonfiction, including autobiography and biography, the essay, reviews, and humor using a process of invention and discovery, writing, analysis, evaluation, and revision. Combines lecture, discussion, and workshop, leading to the production of marketable quality creative nonfiction.	Prerequisites: None. CRW150 recommended but not required.	LEC 3.0 3.0 3.0
CRW181	Focused Topics in Writing: Non-Fiction	Analysis, writing, and revision of genre or elements within non-fiction.	Prerequisites: None. CRW150 suggested but not required.	LEC 1.0 1.0 1.0
CRW190	Introduction to Screenwriting	Overview of screenwriting elements; introduction to screenwriting techniques CRW150 recommended but not required.	Prerequisites: None. CRW150 recommended but not required.	LEC 3.0 3.0 3.0
CRW191	Focused Topics in Writing: Plays	Analysis, writing, and revision of genre or elements within plays and/or motion picture screenplays.	Prerequisites: None. CRW150 suggested but not required.	LEC 1.0 1.0 1.0
CRW200	Readings for Writers	Close analysis and interpretation of selected literary texts designed to strengthen the students' own writing by extending their familiarity with the genre in which they write and their knowledge of selected literary elements. One-on-one meetings between student and instructor.	Prerequisites: A grade of C or better in RW150 or permission of Instructor.	LAB 1.0 1.0 0.0
CRW201	Portfolio	Close analysis of the creative writing portfolio culminating in selection, revision, editing, and compiling of the student's own literary work in a portfolio. Students meet individually with instructor to choose, prepare, and compile their work.	Prerequisite: (Acceptance into Creative Writing Certificate Program and completion of at least nine (9) credit hours in creative writing (CRW)), or permission of Program Director.	LAB 1.0 1.0 0.0

CRW202	The Writer as Witness	Studio course focusing on writing with the writer as witness of the world: pre-writing, writing, analysis, evaluation, and writing of monologue and dialogue in various formats	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW203	Dialogue	Studio course focusing on writing dialogue in a variety of genres; prewriting, writing, analysis, evaluation, and writing of monologue and dialogue in various formats	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW204	Journaling	Studio course focusing on journal writing	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW220	Intermediate Writing Children's Literature	Application of techniques in writing literature for children. Emphasis on independent writing, self-evaluation, and revision. Includes completion of a major writing project of marketable quality	Prerequisites: A grade of C or better in CRW120 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW242AF	Writing Studio Workshop I: Poetic Forms	Studio course focusing on writing poetic forms; prewriting, writing in forms, analysis, scansion, evaluation, research, and revision of poetry in a variety of forms	Prerequisites: None.	LEC 3.0 3.0 3.0
CRW242AH	Writing Studio Workshop I: Musical Elements of Poetry	Studio course focusing on the musical elements of poetry, including sounds and rhythms, rhyme, traditional rhetorical devices, line and stanza; examines relationship between the written and spoken poem; prewriting, writing, analysis, evaluation, and revision of poetry	Prerequisites: None.	LEC 3.0 3.0 3.0
CRW251	Topics in Creative Writing	Analysis, writing, and revision focused on a selected element applicable to all genres of creative writing.	Prerequisites: None. CRW150 recommended.	LEC 3.0 3.0 3.0
CRW252AB	Writing Studio Workshop II: Point of View	Studio course focusing on point of view; prewriting, writing, analysis, evaluation, and revision; experimentation with using different points of view; students may work in any genre	Acceptance to the Creative Writing program or permission of the program coordinator.	LEC 3.0 3.0 3.0

CRW260	Intermediate Poetry Writing	Emphasis on writing a series of original poems; analysis and evaluation of the functions and effects of established works of poetry; concentration on evaluation and revising students' poetry through intensive workshopping.	Prerequisites: A grade of C or better in CRW160 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW261	Topics in Writing: Poetry	Analysis, writing, and revision of genre or element within poetry	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW270	Intermediate Fiction Writing	Writing original short stories; analysis of works of fiction; concentration on revising students' fiction through intensive workshopping.	Prerequisites: A grade of C or better in CRW170.	LEC 3.0 3.0 3.0
CRW271	Topics in Writing: Fiction	Analysis, writing, and revision of genre or element within fiction	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW272	Planning and Structuring the Novel	Focus on planning, structuring, and beginning a novel; prewriting, writing, analysis, evaluation, and revision of novel plans and excerpts	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW273	Writing the Novel	Provides the beginning novelist with structure, support, and guidance vital to sustained writing; focus on establishing goals and using critique sessions with instructor and peers to draft a novel; open- and topic-focused in-class forums, novel writing, peer and instructor critiques	Prerequisites: A grade of C or better in CRW272 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW274	Revising the Novel	Studio course workshop format. Requires a complete novel finished, in manuscript, ready for revision and polishing	Prerequisites: A grade of C or better in CRW273 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW281	Topics in Writing: Non-Fiction	Analysis, writing, and revision of genre or element within non-fiction	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW290	Intermediate Screenwriting	Drafting and revision of original screenplay; overview of marketing a screenplay	Prerequisites: A grade of C or better in CRW190 or permission of Instructor.	LEC 3.0 3.0 3.0



CRW291	Topics in Writing: Plays	Analysis, writing, and revision of genre or element within plays and/or motion picture screenplays	Prerequisites: A grade of C or better in CRW150 or permission of Instructor.	LEC 3.0 3.0 3.0
CRW298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CRW298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CRW298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

CSC100	Introduction to Computer Science (C++)	Concepts of problem solving, structured programming in C++, fundamental algorithms and techniques, and computer system concepts. Social and ethical responsibilities. Intended for majors other than Computer Science	Prerequisites: A grade of C or better in MAT120 or MAT121 or MAT122.	L+L 3.0 3.0 3.0
CSC100AA	Introduction to Computer Science (C++)	Concepts of problem solving, structured programming in C++, fundamental algorithms and techniques, and computer system concepts. Social and ethical responsibilities. Intended for majors other than Computer Science	Prerequisites: A grade of C or better in MAT120 or MAT121 or MAT122.	L+L 3.0 4.0 4.0
CSC100AB	Introduction to Computer Science (C++)	Concepts of problem solving, structured programming in C++, fundamental algorithms and techniques, and computer system concepts. Social and ethical responsibilities. Intended for majors other than Computer Science	Prerequisites: A grade of C or better in MAT120 or MAT121 or MAT122.	L+L 4.0 4.0 4.0
CSC110	Introduction to Computer Science (Java)	Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms and techniques and computer system concepts. Social and ethical responsibilities. Intended for Computer Science and Computer Systems Engineering Majors	Prerequisites: A grade of C or better in MAT120 or MAT121 or MAT122.	L+L 3.0 3.0 3.0
CSC110AA	Introduction to Computer Science (Java)	Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms and techniques and computer system concepts. Social and ethical responsibilities. Intended for Computer Science and Computer Systems Engineering Majors.	Prerequisites: A grade of C or better in MAT120, or MAT121, or MAT122.	L+L 3.0 4.0 4.0

CSC110AB	Introduction to Computer Science (Java)	Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms and techniques and computer system concepts. Social and ethical responsibilities. Intended for Computer Science and Computer Systems Engineering Majors	Prerequisites: A grade of C or better in MAT120 or MAT121 or MAT122.	L+L 4.0 4.0 4.0
CSC120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean switching algebra and circuit minimization techniques. Analysis and design of combinational logic, flip-flops, simple counters, registers, ROMs, PLDs, synchronous and asynchronous sequential circuits, and state reduction techniques. Building physical circuits.	Prerequisites: None. Corequisites: CSC100 or CSC110 or permission of Instructor.	L+L 4.0 6.0 6.0
CSC150	Programming in C/C++	Introduction to C and C++ programming. Flow control, functions, pointers, data structures, file handling, and introduction to object-oriented programming	Prerequisites: Permission of Instructor.	L+L 3.0 4.0 4.0
CSC150AA	Programming in C/C++	Introduction to C and C++ programming. Flow control, functions, pointers, data structures, file handling, and introduction to object-oriented programming	Prerequisites: Permission of Instructor.	LEC 4.0 4.0 4.0
CSC180	Computer Literacy	Introduction to computers and technology and their impact on society. Explores technology, current topics in computing, applications and related issues. Students gain fluency in integrating technology to solve problems using computational thinking. Use of application software to create documents, spreadsheets, databases, e- mail and text files, and use of Internet browsers.	Prerequisites: None.	LEC 3.0 3.0 3.0

CSC180AA	Computer Literacy	Introduction to computers and technology and their impact on society. Explores technology, current topics in computing, applications and related issues. Students gain fluency in integrating technology to solve problems using computational thinking. Use of application software to create documents, spreadsheets, databases, e- mail and text files, and use of Internet browsers.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSC180AB	Computer Literacy	Introduction to computers and technology and their impact on society. Explores technology, current topics in computing, applications and related issues. Students gain fluency in integrating technology to solve problems using computational thinking. Use of application software to create documents, spreadsheets, databases, e- mail and text files, and use of Internet browsers.	Prerequisites: None.	LEC 4.0 4.0 4.0
CSC181	Applied Problem Solving with Visual BASIC	Introduction to systematic definition of problems, solution formulation, and testing. Visual BASIC programming language applied to problems in mathematics, science, and business	Prerequisites: None.	LEC 3.0 3.0 3.0
CSC181AA	Applied Problem Solving with Visual BASIC	Introduction to systematic definition of problems, solution formulation, and testing. Visual BASIC programming language applied to problems in mathematics, science, and business	Prerequisites: None.	L+L 3.0 4.0 4.0
CSC181AB	Applied Problem Solving with Visual BASIC	Introduction to systematic definition of problems, solution formulation, and testing. Visual BASIC programming language applied to problems in mathematics, science, and business	Prerequisites: None.	LEC 4.0 4.0 4.0

CSC182	Principles of Programming with C#.NET	Introduction to object-oriented program analysis, design, and development using Visual C#.NET. Includes general concepts, data types, expressions, flow control, methods, classes, arrays, event-driven models, Windows applications, and Web applications	Prerequisites: None.	LEC 3.0 3.0 3.0
CSC182AA	Principles of Programming with C#.NET	Introduction to object-oriented program analysis, design, and development using Visual C#.NET. Includes general concepts, data types, expressions, flow control, methods, classes, arrays, event-driven models, Windows applications, and Web applications	Prerequisites: None.	L+L 3.0 4.0 4.0
CSC185	World Wide Web and Introductory Internet Programming	Organization of and access to information on the Internet. Design, creation and publication of interactive web pages with HTML, multimedia, animated custom graphics, applets and JavaScript programming. Ethical issues, including security and privacy on the World Wide Web	Prerequisites: None.	LEC 3.0 3.0 3.0
CSC185AA	World Wide Web and Introductory Internet Programming	Organization of and access to information on the Internet. Design, creation and publication of interactive web pages with HTML, multimedia, animated custom graphics, applets and JavaScript programming. Ethical issues, including security and privacy on the World Wide Web	Prerequisites: None.	L+L 3.0 4.0 4.0
CSC200	Principles of Computer Science (Java)	Introduction to computer science. Issues and concepts throughout the field, including software development, data organization, machine architecture, algorithmic machines, and ethics in computing. Programming in Java.	Prerequisites: A grade of C or better in CSC110 or (CSC100 or equivalent) and permission of Instructor.	L+L 3.0 3.0 3.0

CSC200AA	Principles of Computer Science (Java)	Introduction to computer science. Issues and concepts throughout the field, including software development, data organization, machine architecture, algorithmic machines, and ethics in computing. Programming in Java	Prerequisites: A grade of C or better CSC110 or (CSC100 or equivalent) and permission of instructor).	L+L 3.0 4.0 4.0
CSC200AB	Principles of Computer Science (Java)	Introduction to computer science. Issues and concepts throughout the field, including software development, data organization, machine architecture, algorithmic machines, and ethics in computing. Programming in Java	Prerequisites: A grade of C or better in CSC110 or (CSC100 or equivalent) and permission of Instructor.	L+L 4.0 4.0 4.0
CSC205	Object Oriented Programming and Data Structures	Covers Object-Oriented design and programming; elementary data structures; arrays; lists; stacks; queues; binary trees; recursion; searching and sorting algorithms.	Prerequisites: A grade of C or better in CSC110 or permission of Instructor.	L+L 3.0 3.0 3.0
CSC205AA	Object Oriented Programming and Data Structures	Covers Object-Oriented design and programming; elementary data structures; arrays; lists; stacks; queues; binary trees; recursion; searching and sorting algorithms.	Prerequisites: A grade of C or better in CSC110 or permission of Instructor.	L+L 3.0 4.0 4.0
CSC205AB	Object Oriented Programming and Data Structures	Covers Object-Oriented design and programming; elementary data structures; arrays; lists; stacks; queues; binary trees; recursion; searching and sorting algorithms.	Prerequisites: A grade of C or better in CSC110 or permission of Instructor.	L+L 4.0 4.0 4.0
CSC205AC	Object Oriented Programming and Data Structures	Covers Object-Oriented design and programming; elementary data structures; arrays; lists; stacks; queues; binary trees; recursion; searching and sorting algorithms.	Prerequisites: A grade of C or better in CSC110 or permission of Instructor.	L+L 4.0 5.0 5.0
CSC205AD	Object Oriented Programming and Data Structures	Covers Object-Oriented design and programming; elementary data structures; arrays; lists; stacks; queues; binary trees; recursion; searching and sorting algorithms.	Prerequisites: A grade of C or better in CSC110 or permission of Instructor.	L+L 4.0 6.0 6.0

CSC210	Data Structures and Algorithms (Java)	Static and dynamic data structures and associated applications; recursive and iterative sorting and searching algorithms; introduction to object oriented design and programming techniques; software engineering methods including design models and implementation/testing strategies; professional responsibilities; Java language.	Prerequisites: A grade of C or better in CSC200.	L+L 3.0 3.0 3.0
CSC210AA	Data Structures and Algorithms (Java)	Static and dynamic data structures and associated applications; recursive and iterative sorting and searching algorithms; introduction to object oriented design and programming techniques; software engineering methods including design models and implementation/testing strategies; professional responsibilities; Java language	Prerequisites: A grade of C or better in CSC200.	L+L 3.0 4.0 4.0
CSC210AB	Data Structures and Algorithms (Java)	Static and dynamic data structures and associated applications; recursive and iterative sorting and searching algorithms; introduction to object oriented design and programming techniques; software engineering methods including design models and implementation/testing strategies; professional responsibilities; Java language.	Prerequisites: A grade of C or better in CSC200.	L+L 4.0 4.0 4.0
CSC220	Programming for Computer Engineering	Introduction to procedural programming (C/C++) and hardware description language (VHDL).	Prerequisites: A grade of C or better in ((EEE120 or CSC120) and CSC205) or permission of Instructor.	L+L 3.0 5.0 5.0
CSC225	Assembly Language Programming on Motorola Microprocessors	Assembly language programming including input/output programming and exception/interrupt handling. Register-level computer organization, I/O interfaces, assemblers, and linkers. Macintosh-based assignments.	Prerequisites: A grade of C or better in (CSC100 or CSC110 or CSC200) and CSC/EEE120 or permission of Instructor.	L+L 4.0 5.0 5.0

CSC230	Computer Organization and Assembly Language	Assembly language programming including input/output (I/O) programming and exception/interrupt handling. Register-level computer organization, I/O interfaces, assemblers, and linkers. Processor organization and design, data path, control, pipelining, and input/output. Memory organization with cache and virtual memory.	Prerequisites: A grade of C or better in [(CSC100 or CSC110) and CSC120 EEE120] or permission of Instructor.	L+L 4.0 5.0 5.0
CSC240	Introduction to Different Programming Languages	Introduction to procedural (C/C++), applicative (LISP), and declarative (Prolog) languages.	Prerequisites: A grade of C or better in CSC205 or permission of Instructor.	L+L 3.0 5.0 5.0
CSC240AA	Introduction to Different Programming Languages	Introduction to procedural (C/C++), applicative (LISP), and declarative (Prolog) languages.	Prerequisites: A grade of C or better in CSC205 or permission of Instructor.	LEC 4.0 4.0 4.0
CSC250	Advanced Programming Using C++	Developing Applications in C++; moving from C to C++ including objects and classes, inheritance, polymorphism and data abstraction	Prerequisites: A grade of C or better in CSC150 or permission of Instructor.	L+L 3.0 5.0 5.0
CSC250AA	Advanced Programming Using C++	Developing Applications in C++; moving from C to C++ including objects and classes, inheritance, polymorphism and data abstraction	Prerequisites: A grade of C or better in CSC150 or permission of Instructor.	LEC 4.0 4.0 4.0
CSC260	Object-Oriented Programming in Java	Software development in Java including both applets and applications, in both standard and graphical programming. Includes objects and classes, inheritance, polymorphism, graphical programming with the Abstract Windows Toolkit and the Swing extension, graphical user interface design and layout, event handling, and exception handling	Prerequisites: A grade of C or better in CSC150 or CSC200 or permission of Instructor.	L+L 3.0 4.0 4.0



CSC260AA	Object-Oriented Programming in Java	Software development in Java including both applets and applications, in both standard and graphical programming. Includes objects and classes, inheritance, polymorphism, graphical programming with the Abstract Windows Toolkit and the Swing extension, graphical user interface design and layout, event handling, and exception handling	Prerequisites: A grade of C or better in CSC150 or CSC200 or permission of Instructor.	LEC 4.0 4.0 4.0
CSC261	Advanced Programming in Java	Advanced topics in Java including the JavaBean component model, multithreading, client/server development using Java sockets, the Java Database Connectivity interface (JDBC), and remote method invocation (RMI)	Prerequisites: A grade of C or better in CSC260 or permission of Instructor.	LEC 3.0 4.0 3.7
CSC261AA	Advanced Programming in Java	Advanced topics in Java including the JavaBean component model, multithreading, client/server development using Java sockets, the Java Database Connectivity interface (JDBC), and remote method invocation (RMI)	Prerequisites: A grade of C or better in CSC260 or permission of Instructor.	LEC 4.0 4.0 4.0
CSC270	C# Programming	Developing C# applications for the Microsoft .NET platform. Use of object-oriented principles in developing modularized C# programs	Prerequisites: A grade of C or better in CSC200 or CSC250 or CSC260 or permission of Instructor.	LEC 3.0 3.0 3.0
CSC270AA	C# Programming	Developing C# applications for the Microsoft .NET platform. Use of object-oriented principles in developing modularized C# programs	Prerequisites: A grade of C or better in CSC200 or CSC250 or CSC260 or permission of Instructor.	L+L 3.0 4.0 4.0
CSC270AB	C# Programming	Developing C# applications for the Microsoft .NET platform. Use of object-oriented principles in developing modularized C# programs	Prerequisites: A grade of C or better in CSC200 or CSC250 or CSC260 or permission of Instructor.	L+L 4.0 4.0 4.0

CSC281	Advanced Programming in Visual Basic	Graphical user interfaces are generated for advanced programming applications using Visual Basic. Event-driven programs, programming mouse interactions, interactive computer graphics, file processing, and how to distribute application programs	Prerequisites: A grade of C or better in CSC100 or CSC181 or equivalent programming knowledge or permission of Instructor.	L+L 3.0 4.0 4.0
CSC281AA	Advanced Programming in Visual Basic	Graphical user interfaces are generated for advanced programming applications using Visual Basic. Event-driven programs, programming mouse interactions, interactive computer graphics, file processing, and how to distribute application programs	Prerequisites: A grade of C or better in CSC100 or CSC181 or equivalent programming knowledge or permission of Instructor.	LEC 4.0 4.0 4.0
CSC282AA	Volunteerism for Computer Science: A Service Learning Experience	Service learning field experience within private/public agencies, educational institutions, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
CSC282AB	Volunteerism for Computer Science: A Service Learning Experience	Service learning field experience within private/public agencies, educational institutions, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
CSC282AC	Volunteerism for Computer Science: A Service Learning Experience	Service learning field experience within private/public agencies, educational institutions, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
CSC283	Bioinformatics and Scientific Computing	Introduction to bioinformatics, including history, concepts, major genetic databases and access tools. Computer software and techniques for analyzing one nucleotide or protein sequence, searching for similar sequences, and aligning and comparing two or multiple sequences. Microarray analysis and phylogenetic trees. Application of standard software to bioinformatic computing tasks, including word processing of reports, and use of spreadsheets for statistical analysis and graphing. Text editors, Unix, Internet web site searching and construction, and ethics.	[(BIO156 or BIO181) and (MAT120 or MAT121 or MAT122 or higher-level mathematics course)], or permission of Instructor. Concurrent enrollment in, or previous completion of, BIO208 or BIO212AA is strongly suggested but not required.	L+L 3.0 4.0 4.0

CSC283AA	Bioinformatics and Scientific Computing	Introduction to Bioinformatics, including history, concepts, major genetic databases and access tools. Computer software and techniques for analyzing one nucleotide or protein sequence, searching for similar sequences, and aligning and comparing two or multiple sequences. Microarray analysis and phylogenetic trees. Application of standard software to bioinformatic computing tasks, including word processing of reports, and use of spreadsheets for statistical analysis and graphing. Text editors, Unix, Internet web site searching and construction, and ethics.	Prerequisites: A grade of C or better in [BIO220 and (MAT120 or MAT121 or MAT122)] or Permission of Instructor.	LEC 4.0 4.0 4.0
CSC284	Web Programming and Design with FLASH	Design and publication of interactive web pages using Macromedia FLASH and Action Script. Animation, graphics design, timeline, layers, sound, movie clips, libraries, publishing with HTML, event driven programming, interactive programming of FLASH objects, form processing in FLASH, and programming constructs	Prerequisites: A grade of C or better in CSC185 or CIS233 or permission of Instructor.	LEC 3.0 3.0 3.0
CSC284AA	Web Programming and Design with FLASH	Design and publication of interactive web pages using Macromedia FLASH and Action Script. Animation, graphics design, timeline, layers, sound, movie clips, libraries, publishing with HTML, event driven programming, interactive programming of FLASH objects, form processing in FLASH, and programming constructs	Prerequisites: A grade of C or better in CSC185 or CIS233 or permission of Instructor.	LEC 3.0 4.0 3.7
CSC285	Computer Programming in the WWW Environment	Software development paradigms and environments including Advanced HTML, JavaScript, Common Gateway Interface (CGI) and CGI scripting languages. Security and large scale data management	Prerequisites: A grade of C or better in CSC185 and prior programming experience/coursework.	LEC 4.0 4.0 4.0

CSC285AA	Computer Programming in the WWW Environment	Software development paradigms and environments including Advanced HTML, JavaScript, Common Gateway Interface (CGI) and CGI scripting languages. Security and large scale data management	Prerequisites: A grade of C or better in CSC185 and prior programming experience/coursework.	LEC 3.0 4.0 3.7
CSC294	Special Topics in Computing	Investigation of special topics in computing technology and applications. Examination of industry trends to solve problems and/or investigate issues	Prerequisites: Permission of Instructor.	LEC 3.0 3.0 3.0
CSC294AA	Special Topics in Computing	Investigation of special topics in computing technology and applications. Examination of industry trends to solve problems and/or investigate issues	Prerequisites: Permission of Instructor.	L+L 3.0 4.0 4.0
CSC294AB	Special Topics in Computing	Investigation of special topics in computing technology and applications. Examination of industry trends to solve problems and/or investigate issues	Prerequisites: Permission of Instructor.	LEC 2.0 2.0 2.0
CSC294AC	Special Topics in Computing	Investigation of special topics in computing technology and applications. Examination of industry trends to solve problems and/or investigate issues	Prerequisites: Permission of Instructor.	L+L 2.0 3.0 3.0
CSC294AD	Special Topics in Computing	Investigation of special topics in computing technology and applications. Examination of industry trends to solve problems and/or investigate issues	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
CSC294AE	Special Topics in Computing	Investigation of special topics in computing technology and applications. Examination of industry trends to solve problems and/or investigate issues	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0

CSC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
CSC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
CSC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

CSC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
CSC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CSC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

CSC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CSI108	Basic Telephone Banking Customer Service	Basic customer service skills for new telephone banking representatives. Examines service guidelines, phone etiquette, and phone system. Covers procedures for document requests	Prerequisites: None.	L+L 1.0 2.0 2.0
CSI109	Telephone Banking Center Training-New Hire	Training for new hire telephone banking center representatives. Includes usage of customer request processing system and the sales assist function. Covers strategies on how to make sales offers and how to overcome customer objections	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI110	Credit Card Industry	Overview of credit card industry. Includes federal supervising agencies, laws and regulations, and corporate structure. Emphasis on customer service responsibilities and fair lending policy as well as business ethics	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI111	History and Function of the Credit Card Industry	History and function of the credit card industry. Covers operations and transaction order procedures in addition to terminal functionality, hotel procedures and use of the Merchant Management System (MMS)	Prerequisites: None.	LEC 2.0 2.0 2.0

CSI112	Introduction to U.S. Banking	Introduction to the United States banking industry. Covers bank organization, structure, and regulatory agencies in addition to a review of lenders, borrowers, and direct banking products. Also includes bank profitability, information-based and account-based regulations, and compliance with federal regulations.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI113	Deposit Banking Accounts	Overview of customer accounts. Includes account ownership, relationships, funding options, and availability in addition to account set-up and maintenance. Also covers use of the account center and documentation procedures.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI114	Account Maintenance	Account product maintenance research and procedures. Includes characteristics of various types of accounts, including funds availability and accessibility, wire transfer policy and procedures, and statement features. Also covers Internal Revenue Service (IRS) account forms and procedures for handling fraud and security.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI115	Deposit Banking Lab	Practical application of customer service procedures in account set-up and maintenance. Includes completing rate inquiries, application fallout and accessing customer accounts. Also covers procedures for handling security issues, processing account adjustments and inquiries regarding accounts and tax filing.	Prerequisites: None.	LAB 2.0 6.0 6.0
CSI117	Credit Card Service to Sales	Overview of credit card service to sales. Includes department roles and sales verification. Privacy guard, payment protection, and fraud detection programs, as well as identity theft/fraud procedures, and account level targeting covered	Prerequisites: None.	L+L 3.0 4.0 4.0



CSI118	Telephone Banking Center Representative I	Introductory telephone banking center representative training. Includes overview of banking products and services, compliance, and customer service procedures. Covers various computerized systems used by the representatives	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI120	Introduction to Student Loans	Introduction to the role and processing of student loans within company structure. Includes customer service strategies, professional customer care, and call management in the completion of student loan procedures. Covers loan options, application processes, and customer verification procedures in addition to loan documentation and legal disclosures. Also includes procedures for managing account center and web-top navigation.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI122	Introduction to Cardmember Services	Introduction to credit cardmember services. Covers job responsibilities of a cardmember service account manager. Also covers customer account management including merging accounts, various credit card products and features, and Customer Contact Strategy (CCS). Use of a computer emphasized.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSI123	Credit Card Customer Service	Procedures for handling credit card transactions using the Hypercom System. Covers response calls, Quit Duplicating (QD) situations and procedures for the incrementing/bumping process. Also includes effective customer service techniques	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI124	Intermediate Cardmember Services	Credit cardmember services. Covers balance transfers, call handling procedures, statements, account documentation, payment information, feedback, and complaints. Computer usage emphasized.	Prerequisites: A grade of C or better in CSI122.	L+L 3.0 4.0 4.0

CSI126	Advanced Cardmember Services	Advanced credit cardmember services. Includes authorizations and adjustments, finance charges, listening, and customer interaction strategies. Covers lost/stolen report processing and negotiation techniques.	Prerequisites: A grade of C or better in CSI124.	L+L 2.0 3.0 3.0
CSI127	Banking Platform Basics	Overview of the banking platform operational basics including new account processes. Includes maintenance procedures, bank policies, banking regulations, and various customer products and services. Banking computer system also covered	Prerequisites: None.	L+L 2.0 3.0 3.0
CSI128	Banking Customer Service Associate Responsibilities	Roles and responsibilities of the Customer Service Associate (CSA) in the banking industry. Includes bank products and services, cash handling, currency determinations, credits and debits, balancing, and proofing sorts as well as security procedures. Customer service skills and problem resolution also covered	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI129	Bank Procedures for the Customer Service Associate	Banking procedures and responsibilities for the Customer Service Associate (CSA). Customer identification, checks, drafts, deposits, withdrawals, and payment procedures covered. Fraud detection, loss prevention, and compliance banking also included. Use of a computerized banking system and a Branch Delivery Teller (BDT) emphasized	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI130	Cardmember Assistance	Overview of credit cardmember assistance. Policies and procedures emphasized. Communication tools and cardmember assistance telephone calls covered.	Prerequisites: None.	LEC 3.0 3.0 3.0

CSI131	Credit Card Technology	Overview of computer systems in the credit card industry. Various computer screens to locate, access, and update customer information. Computer telephony integration system emphasized	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI132	Cardmember Assistance Calls	Credit cardmember assistance telephone calling. Placing and answering cardmember phone calls emphasized. Use of a collection system also covered	Prerequisites: A grade of C or better in CSI130.	L+L 2.0 3.0 3.0
CSI135	Banking Center Management	Overview of managing a banking center with an emphasis on the role and responsibilities of an Assistant Banking Center Manager (ABCM). Various management skills including coaching, mentoring, supervising, communication, and strategic planning covered. Also covers bank operation processes, regulations, and cash handling as well as fraud prevention and security procedures. Use and function of an electronic banking system included	Prerequisites: None.	L+L 2.0 3.0 3.0
CSI136	Credit Card Billing and Payments	Introduction to credit card authorization, billing, and statements. Review Average Daily Balance, annual percentage rates, and finance charges. Includes payment process, posting, and collections	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI137	Introduction to Banking	Overview of banking basics including bank terms and primary services. Covers payment services including checks and Electronic Funds Transfers (EFTs). Types of accounts also included	Prerequisites: None.	LEC 1.0 1.0 1.0
CSI138	Processing Credit Card Accounts	Processing procedures for credit card accounts. Includes credit lines, transfers, disputes and fraud. Bank pricing and special service strategies also covered	Prerequisites: None.	LEC 3.0 3.0 3.0

CSI139	Telephone Banking I	Introduction to telephone banking. Banking products and services, merchant checks and various account maintenance procedures covered. Computerized banking systems included	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI140	Credit Card Telemarketing	Basic overview of a telemarketer's role in the credit card industry. Covers the mission, vision, and values of the corporation and department duties. Includes traditional marketing methods and strategies, consumer credit structure, and customer feedback process	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI141	Telephone Banking II	Advanced telephone banking. Computerized banking systems emphasized. Covers customer requests, customer account research and handling, and monetary transactions. Communication skills also included	Prerequisites: A grade of C or better in CSI139.	L+L 3.0 4.0 4.0
CSI142	Responsibilities of a Telemarketer	Telemarketing representative responsibilities and performance management. Includes credit card basics, consumer credit, industry cycles, annual percentage rate, marketing features, workflows, and credit card types. Overview of computer systems and screens also covered	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI143	Cardmember Payment Assistance	Procedures and policies for calling and collecting payments from credit card members. Effective customer service techniques for payment resolution on delinquent accounts emphasized	Prerequisites: None.	LEC 2.0 2.0 2.0

CSI144	Credit Card Telemarketing Strategies	Overview of credit card telemarketing terms and strategies. Consultative selling procedures and telephone techniques, as well as critical selling skills covered. Includes customer relationships, customer objections, pricing history, marketing segments, and repricing. Laws and regulations also included	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI145	Credit Card Retention	Overview of credit card customer retention and duties of retention account manager. Covers credit card features, customer accounts, finance charges and credit card requests. Basic customer service skills also included	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI146	Credit Card Retention Procedures	Credit card customer retention procedures. Computer system and automated phone system emphasized. Applications, statements, balance transfer and cash access also covered. Outbound sales and retention call procedures included	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI147	Credit Card Retention Process	Practice of credit card customer retention processes. Covers applications, statements, fees, cash access, balance transfer and finance charges. Handling outbound sales and retention calls included. Use of computer system and automated phone system emphasized	Prerequisites: A grade of C or better in CSI146.	L+L 3.0 5.0 5.0
CSI148	Credit Card Balance Transfer I	Overview of credit card marketing services including balance transfer procedures. Covers duties of a marketing services account manager as well as credit card types, features and benefits. Credit protection services, usage calls, and communication skills also included	Prerequisites: None.	LEC 3.0 3.0 3.0

CSI149	Credit Card Balance Transfer II	Application of balance transfer procedures. Automated phone system and computer usage emphasized. Communication skills, usage calls and handling cardmember accounts also covered	Prerequisites: A grade of C or better in CSI148.	L+L 3.0 5.0 5.0
CSI150	Credit Card Collection Guidelines	Overview of credit card collection laws. Includes collection polices and procedures. Credit card company background, products and collection department functions also covered	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI151	Cardmember Retention I	Retention procedures of credit card members. Emphasis on retention closure reasons and account negotiation strategies. Includes cardmember accounts procedures, credit card features, and reward programs	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI153	Cardmember Retention II	Cardmember retention procedures. Auto reopen accounts process and account negotiation strategies emphasized. Balance transfers and finance charges also covered.	Prerequisites: A grade of C or better in CSI151 or Corequisites: CSI151.	L+L 2.0 3.0 3.0
CSI154	Introduction to Debt Settlement	Introduction to the debt settlement industry. Covers customer service representative role in debt settlement including types of hardships, debt solutions, account resources, and legal services available to clients. Also includes Fair Debt Collection Practices Act regulations.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI155	Customer Service for Debt Settlement	Basic customer service principles for debt settlement. Evaluation of various program services as well as types of client debt. Emphasis on elements of customer service debt settlement transactions and effective communication.	Prerequisites: None.	LEC 3.0 3.0 3.0

CSI156	Credit Card Loss Prevention	Overview of security loss prevention in the credit card industry. Includes job responsibilities of loss prevention analysts and line control analysts. Bomb threat procedures, types of fraud, and fraud detection systems also covered. Computer usage and loss prevention phone calls emphasized	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI157	Credit Card Account Management	Practical application of credit card account management. Review computer screens for customer account updates, billings, statements and processing payments. Also covers workflows, finance charges, transfers, disputes, and fraud management.	Prerequisites: A grade of C or better in CSI110, CSI131, CSI136 and CSI138.	LAB 2.0 6.0 6.0
CSI158	Credit Card Telemarketing Techniques	Practical application of telemarketing techniques. Includes workflows, marketing methods, credit card types, and annual percentage rate. Skills for customer response as well as critical selling skills.	Prerequisites: A grade of C or better in CSI140, CSI142 and CSI144 or Corequisites: CSI140, CSI142 and CSI144.	LAB 1.0 3.0 3.0
CSI159	Credit Card Balance Transfer Lab	Practical lab experience completing account requests. Includes authorized buyer and plastics requests in addition to accessing account statements and reports. Also covers information security and closing the sale	Prerequisites: Permission of Department or Division.	LAB 1.0 2.0 2.0
CSI160	Credit Card Fraud Overview	Overview of fraud in the credit card industry. Includes types of fraud, key indicators and prevention techniques as well as the laws and regulations that govern credit card use. Customer service, industry-specific computer systems and credit card procedures also covered	Prerequisites: None.	L+L 3.0 5.0 5.0

CSI161	Fraud Determination I	Account analysis factors, tools and procedures for identifying fraud. Includes lost and stolen fraud types as well as counterfeiting and money laundering. Covers procedures for reporting suspicious activity within banking laws and regulations. Also covers credit risk indicators, credit bureau reports, and the referral process for credit risk accounts	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI162	Credit Card Fraud Procedures	Basic duties and procedures for Fraud Representatives in the credit card industry. Covers general account procedures, fraud classifications, suspicious activity and memo usage	Prerequisites: None.	L+L 3.0 5.0 5.0
CSI163	Fraud Determination II	Account analysis factors using computerized application processing and identity verification systems. Covers account event procedures and classifications. Also includes processes for a fraud alert review and various security verifications. Bad Automated Number Identification (ANI) account procedures and event analysis also covered.	Prerequisites: A grade of C or better in CSI161 or Corequisites: CSI161.	L+L 3.0 4.0 4.0
CSI164	Debt Resolution Account Procedures	Procedures for maintaining debt settlement customer accounts. Emphasis on screens and processes used to maintain accounts, provide education resources to customers, and respond to customer inquiries.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI165	Fraud Determination Lab	Practical application of fraud determination procedures. Includes use of the Transaction Risk Management Systems (TRiMS) through all account processes. Also covers use of the Automated Credit Application Processing System (ACAPS) and Total Systems (TS2) in addition to computerized account tracking and identity verification systems. Bad Automated Number Identification (ANI) account procedures included.	Prerequisites: A grade of C or better in CSI163 or Corequisites: CSI163.	LAB 3.0 6.0 6.0



CSI166	Debt Settlement Services	Practical application of customer service representative debt settlement skills. Includes various types of customers, calls, and interactions in addition to procedures for navigating client accounts. Also covers account modifications, legal services, and negotiations procedures.	Prerequisites: None.	LAB 2.0 6.0 6.0
CSI167	Fraud Loss Prevention I	Fraud loss prevention procedures. Includes components of fraud cases, tagged transactions, and action tabs as well as investigative retrieval tools. Also covers spending patterns and case classification	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI168	Introduction to Debt Resolution Sales	Introduction to debt resolution sales and the debt settlement industry. Covers characteristics, solutions, components, and regulators of debt settlement including the Fair Debt Collection Practices Act. Also includes types of hardships and financial distress, credit reports, and resources available to clients, in addition to an introduction to the sales process.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI169	Fraud Loss Prevention II	Further study of fraud loss prevention procedures. Includes Regulatory Overview and in-depth study of Regulation Z. Also covers workflows, the call interview, Total Systems (TS2), and suspicious activity reports.	Prerequisites: A grade of C or better in CSI167 or Corequisites: CSI167.	LEC 3.0 3.0 3.0
CSI170	Overview of Security Investigations	Overview of credit card security investigation. Includes duties of a security investigator, security procedures, types of fraud and fraud detection. Communication tools, cardmember phone calls and merchant phone calls also covered	Prerequisites: None.	LEC 3.0 3.0 3.0

CSI171	Fraud Loss Prevention Lab	Application of fraud loss prevention procedures. Covers tabs, screens, and actions required for case dispute and resolution. Also includes case flow, Suspicious Activity Reports (SAR), and challenges.	Prerequisites: A grade of C or better in CSI169 or Corequisites: CSI169.	LAB 2.0 6.0 6.0
CSI172	Security Investigations	Advanced credit card security investigations. Includes use of fraud detection computer systems and placement of cardmember phone calls. Fraud case investigations emphasized	Prerequisites: None.	L+L 2.0 3.0 3.0
CSI173	Fraud Recovery I	Procedures for fraud recovery cases. Includes fraud types and indicators as well as recovery case resolution. Also covers Total Systems (TS2) navigation and account access as well as convenience check investigations	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI174	Debt Resolution Sales Procedures	Practical application of debt resolution sales procedures. Covers consultative sales tools and services used in the provision of direct debt management sales. Includes approval calls, enrollment agreements, underwriting and file submission procedures as well as tax consequences and managing client objections.	Prerequisites: None.	L+L 2.0 4.0 4.0
CSI175	Fraud Recovery II	Identification of fraudulent applications and account resolution issues. Includes fraud trend alerts, account transfers, and use of fraud online reference tool. Also covers account resolution issues such as finance charges, statements, adjustments, and chargebacks.	Prerequisites: A grade of C or better in CS173 or Corequisites: CSI173.	LEC 2.0 2.0 2.0

CSI176	Credit Card Industry Merchant Activation	Credit card industry merchant activation history, functions, and associations. Includes various types of credit cards and transaction orders as well as an overview of the Merchant Management System (MMS) search and navigation procedures.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI177	Fraud Recovery Lab	Application of fraud recovery procedures. Includes account searches, reports, and information within a computerized account tracking system as well as procedures for modifying scanned images. Also covers case resolution and workflows.	Prerequisites: A grade of C or better in CSI175 or Corequisites: CSI175.	LAB 2.0 6.0 6.0
CSI178	Merchant Activation Procedures	Use of various Point of Sale (POS) terminals to complete credit card transactions. Covers response calls and effective customer service techniques.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSI179	Telephone Banking Lab	Practical application of customer account maintenance procedures. Includes account conversion, modifications and contact details as well as work request processes, including stop-payment requests and manual offline procedures.	Prerequisites: A grade of C or better in CSI141 or Corequisites: CSI141.	LAB 1.0 2.0 2.0
CSI180	Debt Resolution Sales Practices	Further application of debt resolution sales procedures. Covers consultative sales tools and services used in the provision of direct debt management sales. Includes approval and welcome calls, enrollment agreements, underwriting and file submission procedures as well as disclosures and tax consequences.	Prerequisites: A grade of C or better in CSI174.	L+L 2.0 4.0 4.0
CSI181	Overview of Merchant Services	Overview of credit card merchant services. Covers terms and procedures as well as authorizations and credit analysis. Use of computer system emphasized	Prerequisites: None.	LEC 2.0 2.0 2.0

CSI182	Introduction to Loan Consolidation	Introduction to loan consolidation in the debt settlement industry. Covers consolidation loan terminology, details, cycles, and benefits as well as disclosures and effective business communication for the loan consultant.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI183	Merchant Services	Credit card merchant services. Telephone etiquette, communication skills and effective listening skills covered. Use of phone system as well as memos, queues, supply orders and codes also included.	Prerequisites: A grade of C or better in CSI181 or Corequisites: CSI181.	L+L 2.0 3.0 3.0
CSI184	Loan Consolidation Procedures	Practical application of loan consolidation procedures. Covers benefits of and processes for loan consolidation as well as consultative sales tools and services used in the provision of direct debt management sales. Includes initial calls, enrollment agreements, and customer education procedures as well as effective communication strategies.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI185	Terminal Communication Procedures	Electronic terminal communication issues. Procedures for identifying and correcting communication errors as well as use of telephone terminals. Also covers classification of procedures and the staging/vapping process	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI186	Personal Loans	Introduction to personal loans. Includes characteristics, components, purpose, and function of a personal loan system. Also covers features, benefits, and characteristics of consumer loans in addition to banking legislation and regulations.	Prerequisites: None.	LEC 3.0 3.0 3.0

CSI187	Personal Loan Applications	Personal loan application components and policy. Includes credit reports, identity authentication, and characteristics of fraudulent applications, in addition to application workflow. Also covers guidelines for maintenance, referencing, verification and evaluation of applications.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI188	Personal Loan Account Services	Personal loan services and procedures. Covers assessment of customer need and risk, application and identity fraud, types of business ownership, and procedures for handling self-employment income. Also includes withdrawal strategy and application review.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI189	Personal Loans Lab	Practical application of personal loans banking procedures. Includes navigation of the personal loan system, acquisitions call flow, and procedures for identifying and resolving fraudulent applications and claims. Also covers the applications process including verification, referencing, and review in addition to overrides.	Prerequisites: None.	LAB 2.0 6.0 6.0
CSI190	Merchant Reporting	Overview of credit card merchant reports. Covers report procedures and use of a report management distribution system. Handling of merchant accounts also covered	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI191	Merchant Support Fundamentals I	Introduction to merchant computer support. Includes applications and resources as well as e-connection features. Also covers an overview of the Merchant Management System (MMS) and Point of Sale (POS) Partner in addition to payment processing and the use of POS ports.	Prerequisites: None. Corequisites: CSI193 and CSI195.	LEC 3.0 3.0 3.0
CSI192	Merchant Settlement	Overview of credit card merchant settlement. Covers transactions, sales submissions, third party processors, and netting processes	Prerequisites: None.	LEC 2.0 2.0 2.0

CSI193	Merchant Support Fundamentals II	Advanced features and concepts for the implementation of the Point of Sale (POS) Partner system. Includes importing, exporting, and upgrading/polling in addition to enhanced data function and security. Also covers Application Program Interface (API) use and parameters.	Prerequisites: None. Corequisites: CSI191 and CSI195.	L+L 2.0 4.0 4.0
CSI194	Merchant Research and Resolution	Research and resolution of a credit card merchant's account. Covers cardmember statements, settlement exceptions, and merchant fraud. Use of computer system also included	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI195	Merchant Support Fundamentals Lab	Practical application of merchant support fundamentals. Includes procedures for processing payments and configuring enhanced data in addition to completion of e-connection procedures. Also covers Point of Sale (POS) Partner installs, troubleshooting and uninstalls in addition to procedures for handling escalations.	Prerequisites: None. Corequisites: CSI191 and CSI193.	LAB 1.0 3.0 3.0
CSI196	Credit Card Processing	Practical application of credit card processing skills. Covers transaction orders, debits, and Electronic Benefits Transfer (EBT) procedures in addition to hotel fine dining and Down Line Load (DLL) procedures	Prerequisites: None.	L+L 2.0 3.0 3.0
CSI197	Customer Information Center	Overview of technical skills required to complete customer information center requests. Includes system overview, call identification, and search procedures as well as fraudulent call procedures.	Prerequisites: None.	LEC 1.0 1.0 1.0
CSI200	Retail Website Customer Service	Overview of customer agent's role and responsibilities. Introduction to retail website features and procedures. Includes shopping guides, customer accounts, and basic order entry guidelines and procedures.	Prerequisites: None.	LEC 3.0 3.0 3.0

CSI201	Retail Website Customer Service Procedures	Practical application of retail website customer service procedures. Includes order entry, modifications, and service recovery as well as procedures for handling registries and store services.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI202	Debt Settlement Loan Servicing	Consolidation loan servicing procedures. Covers types of loans, features, and guidelines as well as enrollment structure and loan calculations. Also covers payments, customer protections, and procedures for account collections.	Prerequisites: None.	L+L 4.0 6.0 6.0
CSI206	Banking Member Service Representative	Introduction to banking member service representative roles and responsibilities. Includes communication and problem solving skills when dealing with members. Also covers various types of banking products and services available to members as well as an introduction to computerized banking and online documentation systems.	Prerequisites: None. Corequisites: CSI207, CSI208 and CSI209.	LEC 3.0 3.0 3.0
CSI207	Banking Accounts and Products	Knowledge of bank accounts, products, and procedures for banking member service representatives. Covers new accounts, credit cards, debit cards, certificates of deposit and individual retirement accounts. Self-service banking benefits and procedures as well as cash advances, funds transfers, and wire transfers included.	Prerequisites: None. Corequisites: CSI206, CSI208 and CSI209.	LEC 3.0 3.0 3.0
CSI208	Banking Account Management	Account management procedures for banking member service representatives. Banking terminology and maintenance procedures including member verification and privacy policies. Includes fraud handling and common banking inquiries by members such as updating account information, stopping payments, reordering checks, and requesting refunds. Retention of banking members also covered.	Prerequisites: None. Corequisites: CSI206, CSI207 and CSI209.	LEC 3.0 3.0 3.0

CSI209	Banking Account Management Lab	Practical application of banking member services and procedures. Covers computerized banking systems including online documentation and database usage. Procedures for new accounts and account maintenance included as well as procedures for handling various member requests. Communication and customer service skills emphasized.	Prerequisites: None. Corequisites: CSI206, CSI207 and CSI208.	LAB 1.0 2.0 2.0
CSI216	Credit Card Account Services I	Introduction to cardmember accounts. Credit bureau basics as well as an introduction to telephone techniques and communication skills. Covers system tools and techniques including procedures for accessing accounts and completing applications.	Prerequisites: None. Corequisites: CSI217 and CSI221.	L+L 3.0 4.0 4.0
CSI217	Credit Card Account Services II	Cardmember account access security and procedures. Includes regulations and criteria to complete account activations and modifications in addition to transaction research procedures. Also covers billing statements and account termination.	Prerequisites: None. Corequisites: CSI216 and CSI221.	L+L 3.0 4.0 4.0
CSI218	Credit Card Debt Collection Services I	Introductory credit card debt collection services and procedures. Covers collection call model and calling procedures. Includes payment programs and methods.	Prerequisites: None. Corequisites: CSI219.	L+L 3.0 4.0 4.0
CSI219	Credit Card Debt Collection Services II	Advanced credit card debt collection services and procedures. Usage of internal collection operating systems emphasized. Covers communication strategies, building customer loyalty, and payment on delinquent accounts. Also includes negotiating techniques and financial and special services procedures.	Prerequisites: None. Corequisites: CSI218.	L+L 3.0 4.0 4.0



CSI221	Credit Card Account Services Lab	Practical application of cardmember account services. Includes systems and tools usage for account access and procedures as well as required calculations. Also covers statements, payments, and handling past due accounts as well as problem solving procedures.	Prerequisites: None. Corequisites: CSI216 and CSI217.	LAB 3.0 9.0 9.0
CSI226	Borrower's History	Maintaining a student financial aid loan. Emphasis on maintaining a borrower's history file. Includes privacy regulations as well as the process of buying existing loans and loan consolidation	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI227	Initiating Student Financial Aid	Introduction to processing financial aid. Covers the application process, originating student loans, repayment, and deferment. Includes the processing of delinquent loans, discharging loans, and loan transfers. Emphasis on using an on-line system to manage the process	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI228	Student Loan/Financial Aid Services	Overview of student loan and financial aid customer services. Includes the processing of student loans and financial aid as well as verbal forbearances, loan transfers, and loan buying. Customer service skills and on-line computer system emphasized	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI233	Student Loan Claim Analysis	Student Loan claim file analysis procedures and considerations. Emphasis on the analysis of claims in preparation for collection efforts. Covers account status verification, claim file completion, and payment history review considerations. Includes claim file documentation concerns and agreed upon payment interruption verification	Prerequisites: None.	L+L 3.0 4.0 4.0

CSI234	Student Loan Claim Completion	Claim form completion practices. Emphasis on the completion of student loan claim forms. Covers form selection and information coding practices. Includes cure activity and loan history information as well as claim form information documentation procedures	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI235	Priority Student Loan Claim Process	Procedures for processing priority student loan claims. Emphasis on processing death, false certification, school closure, and disability claims. Covers chapter seven and thirteen bankruptcy issues. Includes claim delivery and transmittal issues as well as administrative forbearance assignment issues	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI236	Defaulted Student Loan Claim Preparation	Defaulted student loan claim preparation concerns. Emphasis on procedures for preparing defaulted claims for processing. Covers computer system navigation and claim file organization, prioritization, and intra-organizational processing. Includes information preservation concerns and claim coding issues	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI240	Credit Services Legal Procedures	Legal procedures for the credit services industry. Includes security responsibility and communication systems, as well as credit law. Also covers account issues including ownership inquiries, verifications, and restrictions	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
CSI241	Credit Services Account Procedures	Account procedures for credit services. Includes rewards, upgrades, and frequent buyer programs. Also covers fees, procedures for saving accounts, limit increases, and lost/stolen cards.	Prerequisites: A grade of C or better in CSI240 or Corequisites: CSI240.	LEC 2.0 2.0 2.0

CSI242	Credit Services Billing Procedures	Credit services billing procedures and statements. Includes disputes and deferred purchases, as well as third party products and services. Also covers back office discounts and procedures for handling payment issues.	Prerequisites: A grade of C or better in CSI242 or Corequisites: CSI241.	LEC 2.0 2.0 2.0
CSI243	Credit Services Lab	Practical application of credit services procedures. Includes computer, phone, and Voice Recognition Unit (VRU) procedures and screens as well as demonstration of effective customer service techniques. Covers procedures for account ownership, verification, and advertising as well as disputes, deferred purchases, and transfers.	Prerequisites: Permission of Department or Division.	LAB 1.0 3.0 3.0
CSI245	Introduction to Credit Granting	Overview of policies and procedures for credit granting. Includes account research, updates, and restrictions as well as authorization procedures. Also covers referrals, applications, and special processing issues.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSI246	Credit Granting Procedures	Practical application for procedures for credit granting. Includes representative responsibilities in the areas of computer skills, customer service, and communication. Also covers procedures for completing customer inquiries, account modifications, and authorizations as well as special processing procedures and referrals.	Prerequisites: None.	L+L 3.0 5.0 5.0
CSI250	Customer Service for Credit Counselors	Basic customer service principles for the credit counselor. Examination of credit-counseling programs covered. Emphasis on elements of customer service transactions	Prerequisites: None.	L+L 3.0 4.0 4.0

CSI251	Legal Issues In Credit Counseling	Overview of laws and practices in granting credit. Types of credit and calculating finance charges included. Emphasis on implications of inadequate payment history on credit ratings.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI252	Credit Counseling New Accounts	Overview of establishing new client accounts in a credit- counseling program. Emphasis on screens used to setup an account.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI253	Credit Counseling Processes	Overview of maintaining a client account in a credit- counseling program. Emphasis on screens used to maintain an account	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI254	Account Management System	Introduction to account reviews. Emphasis on account maintenance through the portfolio review and statement review processes.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSI255	Account Maintenance Procedures	Account maintenance procedures for customer service representatives. Emphasis on managing ongoing client accounts. Covers contact with creditors and clients	Prerequisites: None.	L+L 3.0 4.0 4.0
CSI256	Credit Counseling Account Management	Basic credit counseling account management considerations. Emphasis on credit information provision concerns and individual state jurisdiction stipulations. Covers internal customer service, time management, and diction improvement strategies. Also includes account number typology determination, finance charge calculation, and returned application completion issues	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI257	Credit Counseling Account Processes	Overview of maintaining a client account in a credit counseling program. Emphasis on screens used to maintain an account.	Prerequisites: None.	L+L 3.0 4.0 4.0

CSI258	Credit Counseling and Financial Management	Overview of financial topics relevant to clients and their accounts. Covers creditor information and policies as well as procedures for account review. Also includes identification of and education regarding client financial issues in addition to client resource identification and use.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSI260	Consumer Lending	Consumer lending product knowledge for customer service associate and relationship banker. Examines different types of loans and regulations related to lending. Includes skills to communicate with customers regarding their loan decisions. Covers the entire loan application process	Prerequisites: None.	L+L 1.0 2.0 2.0
CSI262	Advanced Consumer Lending	Advanced knowledge of consumer lending products for relationship bankers. Covers the five C's of credit, Amortization, and payment calculation. Emphasis on identifying sale opportunities for loan and other banking products. Includes tips financial profile questions and recommendation strategies	Prerequisites: A grade of C or better in CSI260.	L+L 1.0 2.0 2.0
CSM101	Quality Customer Service	Examines the nature of quality customer service and the attitudes, knowledge, and skill needed to work effectively in a quality customer service environment. Foundation skills for quality customer services are taught, applied, and practiced	Prerequisites: None.	LEC 3.0 3.0 3.0
CSM202	Principles of Process Improvement	Examines the concepts and tools of quality/continuous customer service improvement. Includes mapping processes, flow charts, focus groups, customer satisfaction surveys, statistical measurement, problem-solving tools and methods of presenting findings, evaluating, and implementing changes to improve customer service	Prerequisites: None.	LEC 3.0 3.0 3.0

CSM203	Teamwork Dynamics	Theory and practice of how team members and team leaders use listening, negotiating and interpersonal skills for the enhancement of team process to improve customer service based on employee evaluations and employee feedback. Included concepts of team development and team problem- solving techniques	Prerequisites: None.	LEC 3.0 3.0 3.0
CSN102DA	Customer User Support	Examines skills, tools and strategies necessary for becoming a computer help-desk or end-user support professional.	Prerequisites: None.	110
CSN110	Information Security Fundamentals	Fundamental concepts of information technology security. Topics include authentication methods, access control, cryptography, public key infrastructure (PKI), network attack and defense methods, hardening of operating systems and network devices, securing remote access and wireless technologies and securing infrastructures and topologies. Emphasis on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of transmission control protocol/internet protocol (TCP/IP) and security concepts and Microsoft (MS) Windows and Linux administration.	Prerequisites: A grade of C or better in CSN126DL or CSN126RH or permission of Program Director. Corequisites: CSN150++ or CSN270.	122
CSN126DL	Linux Operating System	Introduction to the Linux operating system. Develop knowledge and skills required to install, configure and troubleshoot a Linux-based workstation including basic network functions. Learn basic command line and graphical user interface (GUI) desktop environment utilities and applications. Fundamental abilities to achieve the entry-level industry certification covered.	Prerequisites: None.	110

CSN140AB	Introduction to Networks	Focus on the architecture, structure, functions, components, and models of the internet and other computer networks. Principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students will build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Preparation for Cisco certification examination.	Prerequisites: None.	122
CSN150AB	Switching, Routing, and Wireless Essentials	Focus is on configuring switches and routers for use in small and medium-sized networks. Includes virtual local area networks (VLANs), VLAN trunking, inter-VLAN routing, spanning tree protocol (STP), EtherChannel, dynamic host configuration protocol (DHCP), first hop redundancy, local area network (LAN) and switch security, and static routing. Knowledge and skills needed to implement a wireless local area network (WLAN) is also covered. Preparation for Cisco certification examination.	Prerequisites: None.	122
CSN160AB	Enterprise Networking, Security, and Automation	Focus is on the configuration of routers and switches within small and medium size networks for advanced functionality including: open shortest path first (OSPF), network security, access control lists (ACLs), network address translation (NAT), wide area network (WAN) concepts, virtual private networks (VPNs), quality of service (QOS), network management, design, troubleshooting, virtualization, and automation. Preparation for Cisco certification examination.	Prerequisites: None.	122

CSN170	A+ Exam Prep: Computer Hardware Configuration and Support	Explore technical aspects of personal computers, including system components, installation, system configuration, peripheral devices, and notebooks. Emphasis placed on hardware installation, maintenance, mobile devices, and hardware troubleshooting. Helps prepare students for the CompTIA A+ examinations.	Prerequisites: None.	122
CSN270	A+ Exam Prep: Operating System Configuration and Support	Explore advanced technical aspects of maintaining and servicing computers. Emphasis placed on operating system (OS) installation, maintenance, mobile devices, security, software troubleshooting, and on proper usage of tools, safety procedures, and professionalism. Helps prepare students for the CompTIA A+ examinations.	Prerequisites: None.	122
CSR105	Advanced Abandoned Vehicle Inspection	Advanced abandoned vehicle inspection procedures. Covers types of abandoned vehicles, the third party inspection form, fees, and policies as well as governing authority. Also includes additional requirements, letters, and transfer of ownership.	Prerequisites: None.	LEC 0.5 0.5 0.5
CSR106	Basic Abandoned Vehicle Inspection	Basic abandoned vehicle inspection procedures. Covers safety procedures, vehicle types, and eligibility status determination as well as forms completion.	Prerequisites: None.	LEC 0.5 0.5 0.5
CSR107	Driver License Basic Procedures	Basic driver license procedures. Emphasis on accessing, reading, and creating customer records. Covers Driver Maintenance (DM) segments, documentation verifications, all original credentials, and procedures for updating credentials.	Prerequisites: None.	L+L 2.0 3.0 3.0



CSR108	Motor Vehicle Documentation Concerns	Vehicle titling considerations with emphasis on documentation procedures. Includes Department of Revenue policy and procedures and examination of title documents. Also covers trailer and damaged vehicle documentation as well as procedures for completing special vehicle titling	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR109	Motor Vehicle Documentation Procedures	State motor vehicle documentation procedure. Use of computer based government workstation emphasized. Includes procedures for location and modification of customer and vehicle records	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR110	Federal Employee Program Systems: Claims and Inquiries	Overview of the federal employee health benefit program and associated benefits. Emphasis in accessing and operating varying systems and online system tools for processing claims and resolving customer inquiries.	Prerequisites: None.	LEC 4.0 4.0 4.0
CSR111	Motor Vehicle Customer Service	State motor vehicle division record and duplicate credential issuance operations. Emphasis on the replacement and renewal of customer and vehicle records and credentials. Covers workstation operation procedures, title and registration transactions, vehicle updates, and database navigation.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSR112	Federal Employee Program Systems: Correspondence	Overview of Federal Employee Program (FEP) correspondence inquiries. Covers guidelines for processing internal and external correspondence, as well as adjustments, voids, and recoupments.	Prerequisites: None.	L+L 2.0 4.0 4.0

CSR113	Motor Vehicle Title and Registration Administration	Motor vehicle division title and registration record administration procedures. Emphasis on Arizona title transfers, commercial vehicles, trailers, personalized and special plate issuance information. Covers recreational vehicles, titles with/without court orders, bonds, branded titles, mobile homes, and operation of law liens.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSR114	Federal Employee Program Systems: Processing Claims	Overview of the federal employee health benefit program and policies and procedures for processing claims. Covers benefit packages, covered services and costs, and coordination of benefits. Also included customer service standards and techniques.	Prerequisites: None.	LEC 4.0 4.0 4.0
CSR115	Privilege Restriction Documentation	Procedures for documenting the resolution of loss of driving privileges in a state motor vehicle division database. Emphasis on the processing of suspension, revocation, and uninsured driver issues. Covers driver impairment suspension issues and citation notation processing. Also includes driver re-examination, reinstatements, and authorized presence documentation.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR116	Federal Employee Program Systems: Advanced Procedures	Advanced policies and procedures for completing claims. Covers access and navigation of the membership system to include claims processing, pricing, recalculations, and suspends. Also includes anesthesia pricing procedures, deferrals, and J codes.	Prerequisites: A grade of C or better in CSR114.	L+L 4.0 6.0 6.0
CSR117	Pharmaceutical Assistance Programs	Overview of pharmaceutical assistance programs. Computerized database usage emphasized. Includes eligibility, medications, and enrollment procedures. Customer correspondence and rebates also covered	Prerequisites: None.	L+L 2.0 3.0 3.0

CSR118	Property Insurance Financial Security Customer Service	Financial security needs determinations procedures for the customer service representative. Referrals, value factors, and solutions applicable to providing opportunities for member financial security. Also includes company lines of business.	Prerequisites: None.	L+L 1.0 2.0 2.0
CSR119	Introduction to Homeowner Insurance Customer Service	Introduction to homeowner insurance components and coverage types for the customer service representative. Covers the home buying process as well as industry specific vocabulary and contracts.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSR120	Homeowner Policy Issuance Customer Service	Examination of homeowner insurance components and policies for customer representative issuance procedures. Covers dwelling types and characteristics as well as various systems and procedures for policy issuance. Also includes an introduction to old age homes procedures.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR121	Homeowner Policy Servicing Customer Service	Homeowner policy servicing components for the customer service representative. Covers systems and procedures for completing policy modifications, cancellations, and declines. Also includes Earned Premium Location (EPL) and Probable Maximum Loss (PML) guidelines.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR122	Introduction to Unit Owner Policy Customer Service	Unit owner policy components and procedures for the customer service representative. Covers various systems and procedures for issuance, modification, cancellation, and rewrite of policies. Also includes strategies for needs, determinations, and procedures for responding to member coverage inquiries.	Prerequisites: None.	L+L 2.0 3.0 3.0

CSR123	Introduction to Rental Property Insurance Customer Service	Introduction to rental property insurance components and policies for the customer service representative. Covers various systems and procedures for issuance, modification, and cancellation of policies as well as declined accounts.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR124	Renters Valuable Personal Property Customer Service I	Introduction to renters valuable personal property insurance procedures for the customer service representative. Covers types of policies, coverages, and limits as well as issuance and billing procedures. Also includes member policy update procedures.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR125	Renters Valuable Personal Property Customer Service II	Additional renters valuable personal property insurance procedures. Includes characteristics of valuable personal property coverage and limits as well as guidelines and procedures for dealing with collections. Also covers policy modifications, declines, and cancellations.	Prerequisites: A grade of C or better in CSR124.	L+L 2.0 3.0 3.0
CSR126	Automobile Insurance Customer Service Procedures	Automobile insurance industry customer service procedures. Covers roles and responsibility of a call center customer service consultant, including customer care expectations, call flow guidelines, insurance policy lifespan, and bill processing. Also covered workstation operation principles.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSR127	Advocate-Driven Medication Procedures I	Procedures for advocate-driven medication customer service representatives. Covers patient advocate criteria and responsibilities. Eligibility requirements, enrollment procedures, and Health Insurance Portability and Accountability Act of 1996 (HIPAA) compliance standards included	Prerequisites: None.	LEC 2.0 2.0 2.0

CSR128	Advocate-Driven Medication Procedures II	Further examination of procedures for advocate- driven medication customer service representatives. Medication authorizations and changes as well as medical insurance, claims, and customer correspondence covered	Prerequisites: A grade of C or better in CSR127.	LEC 2.0 2.0 2.0
CSR129	Advocate-Driven Medication Procedures Lab	Laboratory for advocate-driven medication customer service representatives. Computerized database usage emphasized. Patient eligibility, accounts, correspondence and claims included.	Prerequisites: A grade of C or better in CSR128.	LAB 2.0 4.0 4.0
CSR136	Health Care Insurance: Claims I	Overview of health insurance, medical terminology, and various operating systems and applications. Also includes research of medical, outpatient, and inpatient claims.	Prerequisites: None.	L+L 4.0 6.0 6.0
CSR137	Health Care Insurance: Claims II	Guidelines and procedures for finalizing claims. Covers research and manual pricing procedures, adjudication, and claim liability in addition to procedures for completing cutbacks and recovery.	Prerequisites: A grade of C or better in CSR136.	L+L 2.0 3.0 3.0
CSR138	Health Care Insurance: Claims III	Overview of computer usage in the health care insurance industry. Covers various on-line systems/applications, benefit plans and screens, eligibility, pre-certification, and claims pricing. Claims processing emphasized.	Prerequisites: A grade of C or better in CSR137.	L+L 4.0 6.0 6.0
CSR139	Introduction to Retail Pharmacy Customer Care	Introduction to the retail pharmacy program. Includes customer care responsibilities, confidentiality, and eligibility status in addition to various types of member inquiries. Also covers quality assurance and Federal and State laws governing controlled substances.	Prerequisites: None.	LEC 3.0 3.0 3.0

CSR143	Patient Prescription Adherence Procedures	Overview of patient prescription adherence program procedures for patient support representative. Includes program benefits, eligibility requirements, enrollment procedures, and waiver process. Computerized database usage emphasized	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR145	Prescription Prior Authorization I	Prescription prior authorization procedures for federal employees. Covers eligibility as well as claims process and claims adjudication. Computerized databases and automated phone systems emphasized	Prerequisites: None.	L+L 3.0 4.0 4.0
CSR146	Prescription Prior Authorization II	Advanced prescription prior authorization procedures for federal employees. Usage of various computerized databases emphasized. Includes drug benefit management, drug limitation guidelines, standard allowance fill quantity, and prior authorization fill quantity. Approved and denied authorizations also covered.	Prerequisites: A grade of C or better in CSR145.	L+L 3.0 4.0 4.0
CSR147	Health Care Insurance: Correspondence	Overview of health care insurance correspondence inquiries. Covers guidelines for processing internal and external correspondence, including reconsiderations, grievances, appeals, and adjustments.	Prerequisites: None.	L+L 4.0 6.0 6.0
CSR148	Health Care Insurance: Customer Service	Overview of customer service standards and objectives for health care insurance phone inquiries. Covers customer service solution processes, including first call resolution, account inquires, member eligibility and benefits. Health care regulations also covered.	Prerequisites: None.	L+L 4.0 6.0 6.0

CSR155	Retail Pharmacy Plans	Retail pharmacy benefit plan design. Includes types of plans, limitations, and drug coverage in addition to fulfillment requests. Also covers procedures for accessing accounts, responding to caller inquires, completing test claims, and steps for locating formulary alternatives.	Prerequisites: A grade of C or better in CSR139.	LEC 3.0 3.0 3.0
CSR156	Retail Pharmacy Procedures	Practical application of retail pharmacy customer care procedures. Includes procedures for accessing accounts, responding to eligibility issues, and completing customer requests. Also covers billing and payment procedures as well as the provision of non-technical web support.	Prerequisites: A grade of C or better in CSR139.	L+L 2.0 4.0 4.0
CSR157	Mail Order Pharmacy Procedures	Practical application of mail order pharmacy customer care procedures. Includes procedures for managing billing and payment inquiries as well as order status processes and prior authorizations.	Prerequisites: A grade of C or better in CSR155.	L+L 2.0 3.0 3.0
CSR158	Pharmacy Support Services	Overview of a pharmacy support representative's duties. Includes techniques for addressing electronic communication and formatting standards. Covers claims service including codes, rejections, overrides, and search methods, as well as coordinating benefits. Usage of various pharmaceutical's computer programs emphasized.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR159	Motor Vehicle Fraudulent Documents	Policies and procedures for the identification of Motor Vehicle Department fraudulent documents. Includes examination of paper and plastic/laminated documents as well as identification of counterfeits and alterations. Also covers interviewing techniques and procedures for handling fraud situations	Prerequisites: None.	LEC 1.0 1.0 1.0

CSR160	Pharmacy Practice for the Customer Service Representative	Orientation to customer service responsibilities in pharmacy practice. Includes educational and licensure requirements as well as basic functions of the pharmacy and the customer service representative	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
CSR162	Pharmacy Operations for the Customer Service Representative	Customer service responsibilities in pharmacy operations. Includes procedures for prescription dispensing and drug distribution in the retail setting. Inventory control, packaging and storage, in addition to computer usage and third party operations	Prerequisites: A grade of C or better in CSR160.	LEC 3.0 3.0 3.0
CSR163	Telecommunications Industry Collections Customer Service	Introductory collections customer service strategies. Covers essential behaviors for effective customer support and professional interaction, in addition to knowledge of company products, services, roles and functions.	Prerequisites: None.	LEC 1.0 1.0 1.0
CSR164	Telecommunications Industry Receivables Management	Receivables management procedures for customer services representatives in the telecommunications industry. Covers tools and systems for managing billing account modifications, prorations, and credit adjustments in addition to handling fraud claims. Also includes payment processing, options and restrictions, as well as distributions and various declined payments.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSR165	Collections Customer Service	Practical application of telecommunications collections customer service procedures. Covers access to and navigation of tools and systems for completion of billing, payment and collections services.	Prerequisites: None.	L+L 2.0 4.0 4.0



CSR166	Telecommunications Industry Collections	Telecommunications industry collection procedures and strategies. Includes policies and procedures for collections, including the Fair Debt Collections Practice Act (FDCPA) and federal laws and regulations for compliance. Also covers collections schemes and payments options, as well as call escalation and miscellaneous billing procedures.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR169	Specialty Pharmaceuticals I	Introduction to specialty pharmaceutical services. Covers the role and responsibilities of specialty pharmacies as well as benefit plan design. Also includes components of Medicare, eligibility, and benefits in addition to reimbursement program procedures and benefits.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSR170	Specialty Pharmaceuticals II	Specialty pharmacy and pharmaceuticals management. Covers third party administration, prior authorizations, and systems for coding, billing, and payments. Also includes payer plans and benefits in addition to special group plans and services.	Prerequisites: A grade of C or better in CSR169.	LEC 2.0 2.0 2.0
CSR176	Customer Product Service Management for Web Hosting/Domain Registrar	Introduction to web hosting and domain registrar products and customer services. Includes features and benefits of branding, productivity, presence, and marketing.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSR177	Customer Representative for Web Hosting/Domain Registrar Services	Customer service account procedures for web hosting and domain registrar product application. Includes new accounts, branding, and presence strategies and products, and their application to meeting customer needs. Also covers hosting and website design procedures as well as completion of a marketing consultation.	Prerequisites: None.	L+L 2.0 4.0 4.0
CSR178	Customer Service Consultations and Troubleshooting Lab	Practical application of strategies and procedures for conducting customer consultations and troubleshooting.	Prerequisites: None.	LAB 1.0 2.0 2.0

CSR184	Business Technology in Customer Service	Foundational business technology for enhancing customer service. Includes the integration of technology into an effective workforce management solution. Covers Enterprise Resource Planning (ERP) in addition to Customer Relationship Management (CRM) and Business Intelligence (BI).	Prerequisites: None.	LEC 2.0 2.0 2.0
CSR195	Customer Service Representative Sales and Marketing	Introduction to sales and marketing strategies for the customer service representative. Includes the sales and negotiation processes as well as behavioral styles and demographics of customers. Also covers types of markets, organizational structure, and elements of a marketing plan.	Prerequisites: None.	L+L 2.0 4.0 4.0
CSR196	Call Center Customer Service	Introduction to practical application for call center representatives. Covers the role of call center representatives and skills and behaviors necessary for successful and effective call flow and completion of inbound calls. Also includes procedures for customer authentication, billing, payments, and claims loss reports as well as de-escalation.	Prerequisites: Permission of Department or Division.	L+L 3.0 5.0 5.0
CSR197	Customer Service Representative Business Practices	Introduction to business practices for the customer service representative. Includes organization types and structures as well as essential business communication techniques and foundational skills. Also covers professional telephone techniques.	Prerequisites: None.	L+L 2.0 3.0 3.0
CSR200	Automobile Representative Customer Services	Automobile representative customer service responsibilities. Includes overview of insurance industry terminology and contracts as well as need determination. Also covers privacy and security issues in addition to relationship management strategies.	Prerequisites: None.	LEC 3.0 3.0 3.0

CSR207	Automobile Policy Adjustment	Emphasis upon policy explanation and adjustment. Covers membership flow-thru criteria, quality customer service information, and in-depth on-line resource instrument review. Also includes consultative selling practice and the observation of acting member service representatives.	Prerequisites: None.	L+L 3.0 4.0 4.0
CSR211	Auto Insurance Quotes	Procedures for providing auto insurance quotes and completing various payments. Covers tools for investigating rate changes as well as procedures for modifying account vehicles and driver information. Also includes account research techniques and reinstatement procedures.	Prerequisites: None.	L+L 3.0 5.0 5.0
CSR212	Automobile Insurance Operations I	Automobile insurance member services representative operating procedures. Emphasis upon explanation of payment and rate information, the provision of written correspondence, and file information completion. Covers representative underwriting observation, fundamental need based sales principles, and phone system usage.	Prerequisites: None.	LEC 3.0 3.0 3.0
CSR213	Automobile Insurance Operations II	Auto insurance account operations. Includes the format and use of vehicle identification numbers (VIN) and the impact of regulation in the insurance industry. Also covers policy procedures including liability, exclusions, and credits. Review of the billing process and statements also covered.	Prerequisites: A grade of C or better in CSR212.	LEC 2.0 2.0 2.0

CSR214	Automobile Insurance Operations Lab	Practical application of auto insurance member services operational procedures. Includes use of the direct sales system to complete account navigation in addition to modification and billing procedures. Emphasis on effective communication skills, information gathering, and sales techniques.	Prerequisites: A grade of C or better in CSR213.	LAB 1.0 2.0 2.0
CSR215	Digital Telephone Customer Service	Digital telephone customer service provisions. Emphasis on the establishment and alteration of digital phone service. Covers phone number assignation, ancillary service provision, and public directory phone number listing information	Prerequisites: None.	L+L 1.0 2.0 2.0
CSR216	Health Claims Processing I	Overview of healthcare claims processing applications. Emphasis on use of a healthcare claims processing system. Includes quality review procedures and responsibilities.	Prerequisites: None. Corequisites: CSR217 and CSR218.	LEC 2.0 2.0 2.0
CSR217	Health Claims Processing II	Procedures for using Alchemy system and electronic data entry procedures for pend report resolution. Includes claim component edits as well as resolution guidelines.	Prerequisites: None. Corequisites: CSR216 and CSR218.	LEC 3.0 4.0 3.7
CSR218	Health Claims Processing III	Procedures for completing benefits and contracts requirements. Includes prior authorization guidelines and procedures as well as claim splitting. iHealth components and claim adjustments and reversals also covered.	Prerequisites: None. Corequisites: CSR216 and CSR217.	L+L 3.0 4.0 4.0
CSR219	Disconnects and Transfers	Procedures for completing disconnects and transfers of service using the Integrated Communications Operations Management System. Includes restrictions, documentation, and scheduling issues	Prerequisites: None.	L+L 1.0 2.0 2.0

CSR220	Sales and Retention	Practical application for call center representatives. Covers skills and behaviors necessary for successful and effective completion of inbound sales and retention calls.	Prerequisites: Permission of Department or Division.	LAB 2.0 6.0 6.0
CSR224	Communications Industry Billing Practices	Provision of billing services to digital telecommunications industry customers. Covers database billing issues, billing policy concerns, payment acceptance, and adjustments processing.	Prerequisites: None.	L+L 1.0 2.0 2.0
CSR225	Digital Telecommunications Customer Service	Principles for the provision of digital telecommunications industry customer service. Emphasis upon the initiation of services to customers. Covers deposit collection, credit check performance, and Internet connection procedures. Includes digital television upgrade and pay-per-view provision information.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSR226	Digital Telecommunications Customer Interaction	Digital telecommunications industry customer service communication techniques. Emphasis on active listening and questioning strategies in the identification of digital telecommunications customer needs. Covers negotiation and customer valuation techniques	Prerequisites: None.	L+L 1.0 2.0 2.0
CSR228	Telecommunications Database Navigation	Telecommunications database navigation procedures. Emphasis on the documentation of customer service activities in a telecommunications database. Covers code and notation interpretation, function key usage, and work order data entry.	Prerequisites: None.	L+L 1.0 2.0 2.0
CSR232	Auto Insurance and Claims Overview	Overview of auto insurance coverage, including claims and claims handling. Emphasis on liability, uninsured and underinsured motorist, medical and physical damage	Prerequisites: None.	LEC 3.0 3.0 3.0

CSR233	Auto Damage Appraisal	Overview of various components of the automobile. Emphasis on types of damage that may require a claims report. Covers appraisal process, total losses, and vehicle design platforms	Prerequisites: None.	LEC 3.0 3.0 3.0
CSR242	Auto Insurance Loss Reports	Automobile insurance loss reports. Determination of fault and claims processing emphasized. Various types of damage covered as well as claim correspondence and compliance policies.	Prerequisites: None.	LEC 2.0 2.0 2.0
CSR243	Auto Insurance Loss Reports Lab	Practical application of processing of automobile insurance accident and loss reports. Emphasis on customer service while processing claims reports. Usage of computerized insurance system included.	Prerequisites: A grade of C or better in CSR242.	LAB 2.0 6.0 6.0
CSR247	Auto Insurance Policies	Overview of insurance policies and servicing procedures. Includes lifecycle of a policy and the procedures for accessing system tools. Also covers policy features, deductibles, and endorsements as well as procedures for handling exclusions and proof of insurance	Prerequisites: None.	L+L 3.0 5.0 5.0
CSR248	Auto Insurance Procedures	Procedures and techniques for providing account customer service. Includes cancellations, reinstatements, and renewal. Also covers manual rate and special renewal procedures	Prerequisites: None.	L+L 3.0 5.0 5.0
CSR249	Auto Insurance Quotes and Accounting	Procedures for providing auto insurance quotes and completing account billings and payments. Covers tools for investigating rate changes as well as procedures for modifying account vehicles and driver information. Also includes account research and customer response techniques	Prerequisites: None.	L+L 3.0 5.0 5.0

CSR280AA	Customer Service Internship	Customer service experience in business or industry. Eighty hours of designated work per credit. Maximum of eight credits allowed	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 1.0
CSR280AB	Customer Service Internship	Customer service experience in business or industry. Eighty hours of designated work per credit. Maximum of eight credits allowed	Prerequisites: Permission of Department or Division.	L+L 2.0 2.0 2.0
CSR280AC	Customer Service Internship	Customer service experience in business or industry. Eighty hours of designated work per credit. Maximum of eight credits allowed	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 3.0
CST103	Foundations of Construction Safety	Occupational Safety and Health Act. Common causes for accidents and fatalities in construction. Abatement techniques for construction-specific hazards. Use of personal protection and lifesaving equipment. Specific types of health hazards related to the construction industry. Proper methods for handling hazardous materials.	Prerequisites: None.	13
CST104	Hand and Power Tools, Equipment, and Workspace	Overview of the selection, use, maintenance and safety procedures for common hand tools, power tools and equipment used in the construction industry. Overview of the maintenance of workspace according to professional standards.	Prerequisites: None.	20
CST105	Construction Calculations	Introduction to basic calculation skills in the construction environment including the four primary operations, United States standard and metric units of measure, geometric figures, area and volume calculations for two and three-dimensional objects. Overview of the use, maintenance, and safety procedures for common hand and power tools.	Prerequisites: None.	20

CST107	Construction Drawings Introduction	Course provides students with the information and skills needed to read and understand construction drawings.	Prerequisites: None.	13
CTE200	Career and Technical Education: Principles, Philosophy and Student Organizations	Examination of the role of career and technical educational (CTE) pathways as they relate to workforce development. Overview of career and technical student organizations (CTSO), occupational clusters, development and role of career and technical education, philosophy, history and impact of federal funding revenue streams, and career and technical delivery system.	Prerequisites: None.	LEC 3.0 3.0 3.0
CTE210	Career and Technical Education: Teaching Methods and Curriculum Development	Overview and practical application of teaching methodology and curriculum development for secondary education career and technical education teachers. Teaching strategies and learning styles covered. Curriculum design/mapping, lesson objectives, time management skills, teaching resources, and Arizona Department of Education Career and Technical Curriculum Framework Standards also included.	Prerequisites: None.	LEC 3.0 3.0 3.0
CTE220	Career and Technical Education: Classroom Management and Lab Safety	Classroom management techniques. Classroom discipline models, student behavior and misbehavior, group dynamics, student self-motivation, and learning styles covered. Essentials of lab safety issues, including regulatory agencies and policies. State Board of Education Professional Teaching Standards emphasized.	Prerequisites: None.	LEC 4.0 4.0 4.0



CTE230	Career and Technical Education: Instructional Technology	Exploration of the use of instructional technology in career and technical education. Including history of technology in education, teacher and student technology standards, landmark studies related to using technology in education, and utilization of technology in the classroom. Local, state, and national standards, including career and technical standards for education covered, as well as identification of professional development opportunities.	Prerequisites: None.	LEC 2.0 2.0 2.0
CTE240	Career and Technical Education: Designing, Implementing and Managing Student Organizations	Overview of Career and Technical Student Organizations (CTSO). Examination of historical perspectives, recruitment, and retention of student members and implications of state and federal CTSO standards. Emphasis on funding organizations and fiscal responsibility, with focus on developing and conducting student activities.	Prerequisites: None.	LEC 2.0 2.0 2.0
CTE250	Career and Technical Education: Principles and Practices of Cooperative Education Programs	Examines high school cooperative education programs. Emphasis on state and federal youth employment laws, work-based learning principles, work-place standards, and criteria related to career and technical education cooperative programs.	Prerequisites: None.	LEC 3.0 3.0 3.0
CTE260AA	Contemporary Issues in Career and Technical Education	Special topics in career and technical education with an emphasis on current and future issues not covered in other career and technical education courses. Impact of societal changes included.	Prerequisites: None.	LEC 1.0 1.0 1.0
CTE260AB	Contemporary Issues in Career and Technical Education	Special topics in career and technical education with an emphasis on current and future issues not covered in other career and technical education courses. Impact of societal changes included.	Prerequisites: None.	LEC 2.0 2.0 2.0

CTE260AC	Contemporary Issues in Career and Technical Education	Special topics in career and technical education with an emphasis on current and future issues not covered in other career and technical education courses. Impact of societal changes included.	Prerequisites: None.	LEC 3.0 3.0 3.0
CTE290AA	Career and Technical Education Internship	Work-college experiences that involve the combined efforts of educators and industry or other related community partners to accomplish an outcome related to the career objectives of the student. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 1.0
CTR101	Court Reporting: Machine Shorthand Theory Block I	Basic court reporting machine shorthand theory.	Prerequisites: (45 wpm keyboarding or permission of Department or Division) and placement into ENG101 or ENG107 district placement exam OR permission of Department or Division.	L+L 6.0 10.0 10.0
CTR102	Court Reporting: Machine Shorthand Theory Block II	Introduction of court briefs and phrases.	Prerequisites: A grade of C or better in CTR101 or permission of Department or Division or Program Director.	L+L 6.0 10.0 10.0
CTR105	Court Reporting: Punctuation and Grammar	Application of the rules of punctuation, grammar, spelling, and capitalization to sentences, paragraphs, and transcripts through systematic testing and/or projects.	Prerequisites: None.	L+L 1.0 1.0 1.0
CTR106	Court Reporting: Legal Terminology	Civil/criminal law, the judicial system, legal terminologies, and researching legal citations.	Prerequisites: None.	L+L 1.0 1.0 1.0
CTR107	Court Reporting: Medical Terminology	Body systems and functions. Psychological and physical diseases and drugs. Methods of researching medical information.	Prerequisites: None.	L+L 1.0 1.0 1.0
CTR197	Court Reporting Lab	Court reporting practice/transcription as assigned under supervision.	Prerequisites: None. Corequisites: CTR101.	LAB 1.0 5.0 0.0

CTR209	Judicial Procedures for Court Reporting	Professional procedures, techniques, ethics, and introduction to video applications for judicial court reporters. Proper transcription methods and correct formatting styles for transcript production.	Prerequisites: A grade of C or better in CTR102 or permission of Program Director.	L+L 3.0 5.0 5.0
CTR211	Judicial Internship	A minimum of 50 hours of participation in an actual courtroom deposition setting. Transcript production required.	Prerequisites: A grade of C or better in CTR209 and student must pass one (1) 200 words per minute Q/A test with speed and accuracy to meet court reporting industry standards or permission of Program Director.	LAB 1.0 4.0 0.0
CTR215	Computer-Aided Transcription	Computer terminology, trouble-shooting and basic maintenance of a computer-aided transcription (CAT) system. Court reporting system set-up, maintenance and operation. Realtime system applications in specific environments. Production of transcripts from dictation and with a computer-aided transcription system.	Prerequisites: A grade of C or better in (CTR101 and BPC101AA) or permission of Department or Division.	L+L 3.0 3.0 3.0
CTR235	CAT Dictionary Building	Principles of machine shorthand to include definitions, brief forms and phrases. Dictation of technical, legal, and medical language and phrases related to the court reporting profession. Literacy in the use of computer-aided transcription (CAT) software. Edit and use computer-aided transcription software dictionaries.	Prerequisites: A grade of C or better in CTR102 and CTR215.	LEC 1.0 1.0 1.0
CTR251	Court Reporting Speed Building Block III	Instruction, dictation, and readback in speeds of 80-100 wpm in Literary Material; 100-120 wpm in Jury Charge Material; 120-140 wpm in Question/Answer Testimony Material with a minimum of 95% accuracy.	Prerequisites: A grade of C or better in CTR102 or permission of Department or Division.	L+L 14.0 20.0 20.0

CTR251AA	Court Reporting Skill Building: Block III Literary Material	Development of speed and accuracy skills with dictation, readback, and transcription in literary material. Speed requirements of 80 and 100 words per minute (wpm) with a speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).	L+L 4.0 4.0 4.0
CTR251AB	Court Reporting Skill Building: Block III Jury Charge Material	Development of speed and accuracy skills with dictation, readback, and transcription in jury charge material. Speed requirements of 100 and 120 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).	L+L 4.0 4.0 4.0
CTR251AC	Court Reporting Skill Building: Block III Question/Answer Testimony Material	Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Speed requirements of 120 and 140 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AB or CTR252AB or CTR253AB).	L+L 6.0 12.0 12.0
CTR252	Court Reporting Speed Building Block IV	Instruction, dictation, and readback in speeds of 120-140 wpm in Literary Material; 140-160 wpm in Jury Charge Material; 160-180 wpm in Question/Answer Testimony Material with a minimum of 95% accuracy.	Prerequisites: A grade of C or better in CTR251 or permission of Department or Division.	L+L 14.0 20.0 20.0
CTR252AA	Court Reporting Skill Building: Block IV Literary Material	Development of speed and accuracy skills with dictation, readback, and transcription in literary material. Speed requirements of 120 and 140 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR251AA or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).	L+L 4.0 4.0 4.0
CTR252AB	Court Reporting Skill Building: Block IV Jury Charge Material	Development of speed and accuracy skills with dictation, readback, and transcription in jury charge material. Speed requirements of 140 and 160 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR251AB or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).	L+L 4.0 4.0 4.0

CTR252AC	Court Reporting Skill Building: Block IV Question/Answer Testimony Material	Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Speed requirements of 160 and 180 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR251AC or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AB or CTR252AB or CTR253AB).	L+L 6.0 12.0 12.0
CTR253	Court Reporting Speed Building Block V	Instruction, dictation, and readback in speeds of 160-180 wpm in Literary Material; 180-200 wpm in Jury Charge Material; 200-225 wpm in Question/Answer Testimony Material with a minimum of 95% accuracy.	Prerequisites: A grade of C or better in CTR252 or permission of Department or Division.	L+L 14.0 20.0 20.0
CTR253AA	Court Reporting Skill Building: Block V Literary Material	Development of speed and accuracy skills with dictation, readback and transcription in literary materials. Speed requirements 160 and 180 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR252AA or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).	L+L 4.0 4.0 4.0
CTR253AB	Court Reporting Skill Building: Block V Jury Charge Material	Development of speed and accuracy skills with dictation, readback and transcription in jury charge materials. Speed requirements 180 and 200 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR252AB or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).	L+L 4.0 4.0 4.0
CTR253AC	Court Reporting Skill Building: Block V Question/Answer Testimony Material	Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Speed requirements of 200 and 225 words per minute (wpm) with speed and accuracy to meet court reporting industry standards.	Prerequisites: A grade of C or better in CTR252AC or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AB or CTR252AB or CTR253AB).	L+L 6.0 12.0 12.0
CTR253AD	Court Reporting Skill Building Review	Progression and retention of speed and accuracy skills with dictation, readback, and transcription in literary, jury charge, and question/answer material.	Prerequisites: A grade of C or better in CTR253AA, or CTR253AB, or CTR253AC, or permission of Program Director.	LAB 3.0 20.0 0.0

CTR271	Scoping	Ability to read machine shorthand steno notes and employ Computer-Aided Transcript (CAT) software to edit/correct court reporters' files with an emphasis on correct transcript formatting structure. Concentration on grammar, punctuation, proofreading skills, and accuracy to produce transcripts, including but not limited to trials, depositions, conferences, arbitrations, and other administrative hearings.	Prerequisites: A grade of C or better in (BPC101AA, CTR101, and CTR215) or permission of Department or Division.	L+L 2.0 2.0 2.0
CTR272	Transcription	Machine shorthand transcription, realtime writing from audio and/or video files, with an emphasis on correct transcript formatting structure. Concentration on dictation, transcription, proofreading skills and accuracy. Computerized machine shorthand in conjunction with specialized Computer-Aided Transcription (CAT) software to generate transcripts that would include medical, interviews, judicial hearings, dissertations, and meetings.	Prerequisites: A grade of C or better in (BPC101AA, CTR101, CTR215, and CTR271) or permission of Department or Division.	L+L 2.0 2.0 2.0
CTR290	Registered Professional Reporter Preparation	Live dictation practice to increase speed in any machine shorthand system in preparation for the national Court Reporters Association Registered Professional Reporter (RPR) Exam.	Prerequisites: One year of machine shorthand.	LEC 2.0 2.0 2.0
CTR291	Extended Machine Shorthand Practice	Dictation and testing in Literary, Jury Charge, and Question/Answer testimony material at incremental speeds for the purpose of the student to increase machine shorthand speed and accuracy. Readback of paper or computerized notes.	Permission of Program Director or Instructor.	LAB 2.0 2.0 2.0
CTT110	Introduction to Caterpillar Service Industry	Introduction to the Caterpillar organization and product line, basic shop safety, and shop operation. Includes computer operations and service information systems.	Prerequisites: Permission of Department or Division.	L+L 3.0 5.0 5.0

CTT111	Caterpillar Engine Fundamentals	Introduction to diesel engine theory and service procedures. Focuses on Caterpillar engine systems and applications.	Prerequisites: A grade of C or better in CTT110.	L+L 4.0 8.0 8.0
CTT112	Hydraulic Fundamentals	Hydraulic fundamentals, including functions of valves used in Caterpillar hydraulic systems, functions of vane pumps, gear pumps, and piston pumps, and assembly and disassembly of hydraulic components. Includes ISO hydraulic symbols.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT113	Fuel Systems	Introduction to fuel systems used in Caterpillar engines. Covers fuel selection, calibrations, and nozzle testing procedures, governor operation, and hydraulic fuel ratio controls. Includes 1.1 and 1.2 MUI and HEUI, EUI, Nippondenso, and Zexel fuel systems.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT114	Basic Electrical Fundamentals	Basic electrical and electronic principles used by the technician to diagnose and repair electrical systems in Caterpillar machines.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT115	Air Conditioning Fundamentals	Introduction to principles, systems, components, and servicing of air conditioning systems used in Caterpillar products.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT116	Power Train I	Basic components and operations of power train systems used in Caterpillar machines. Covers basic components, clutches, manual shift transmissions, and power shift transmissions.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT117	Machine Hydraulic Systems	Operation, testing, and adjustment procedures for pilot operated hydraulic systems, load sensing pressure compensated (LSPC) hydraulic systems, electro-hydraulic systems, and hydrostatic systems. Components of hydraulic systems and oil flow through the system.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0

CTT118	Caterpillar Dealer Internship I	Application of skills and knowledge gained in CTT coursework in an internship in a dealership environment. Develops professional skills required of Caterpillar service technician. Provides experience in tool usage, shop safety, connective devices, computers and service information systems, air intake and exhaust systems, lubrication systems, cooling systems, fuel systems, engines, and electrical systems. Requires intern to complete a list of learning objectives, keep a logbook, and be evaluated by dealership supervisor and internship coordinator.	Prerequisites: A grade of C or better in CTT110.	LAB 3.0 3.0 0.0
CTT119	Caterpillar Dealer Internship II	Application of skills and knowledge gained in CTT coursework in an internship in a dealership environment. Develops professional skills required of Caterpillar service technician. Provides experience in hydraulics, pumps, valves, cylinders, and pilot-operated implement system. Requires intern to complete a list of learning objectives, keep a logbook, and be evaluated by dealership supervisor and internship coordinator.	Prerequisites: A grade of C or better in CTT110.	LAB 3.0 3.0 0.0
CTT200	Power Train II	Methods of transferring power. Hydraulic-driven machines and mechanical power train components, including differentials, brakes, final drives, and undercarriage.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT201	Machine Electronics	Introduction to machine electronic systems and diagnostic tooling used to diagnose and repair the complex electrical/electronic systems installed in Caterpillar machines.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT202	Engine Diagnostics and Repair	In-depth study of engine diagnostics and repair techniques used to troubleshoot and repair engine problems in Caterpillar machines. Selection and use of Caterpillar diagnostic tools. Covers oil, air, cooling, and fuel systems.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0



CTT203	Machine Diagnostics	Failure analysis, troubleshooting logic, and diagnostic tooling and processes used to diagnose and repair the complex systems installed in Caterpillar machines. Use of Caterpillar's Applied Failure Analysis. Introduction to Service Technician Workbench (STW) applications.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT204	Machine Specific Systems	Introduction to machine-specific systems. Machines covered include compact construction equipment, agricultural combines and challengers, 325B Excavator, off-highway trucks, wheel tractor scrapers, and motor graders.	Prerequisites: A grade of C or better in CTT110.	L+L 3.0 5.0 5.0
CTT205	Caterpillar Dealer Internship III	Application of skills and knowledge gained in CTT coursework in an internship in a dealership environment. Develops professional skills required of Caterpillar service technician. Provides experience in air conditioning systems, power trains, couplings, transmissions, and hydraulic systems. Requires intern to complete a list of learning objectives, keep a logbook, and be evaluated by dealership supervisor and internship coordinator.	Prerequisites: A grade of C or better in CTT110.	LAB 3.0 3.0 0.0
CTT206	Caterpillar Dealer Internship IV	Application of skills and knowledge gained in CTT coursework in an internship in a dealership environment. Develops professional skills required of Caterpillar service technician. Provides experience in lubrication systems, engine air induction systems, cooling systems, fuel systems, timing systems, failure analysis, diagnosis, and troubleshooting of specific types of Caterpillar equipment. Requires intern to complete a list of learning objectives, keep a logbook, and be evaluated by dealership supervisor and internship coordinator.	Prerequisites: A grade of C or better in CTT110.	LAB 3.0 3.0 0.0

CUL101	Culinary Basics	Theory and practice of basic elements of culinary arts fundamentals. Emphasis on safety, sanitation and uniform requirements, culinary terminology, basic nutritional guidelines, equipment needs and usage, standard measurements, knife selection and care, basic knife cuts, and fruit and vegetable identification and preparation.	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL102	Hot Foods	Cooking techniques and preparation of varied meat, fish and poultry items. Theory and practice of production of stocks, sauces, and soups. Study of butchering, yields, purchasing and grade classification.	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL103	Breakfast and Cold Foods	Cooking techniques and preparation of breakfast items, salads, sandwiches, and dressings. Theory and practice of production of egg, pasta, cheeses, and fruit dishes, canap?s and hors d'oeuvre creations. Study of lettuces, fruits, grains, cheeses and dressings as components of salads and sandwiches.	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL104	Bakery and Pastry	Provides a study of cooking techniques and preparation methods for cakes, pies, cookies and simple desserts as well as production of doughs and breads. Includes preparation of various bakery sauces and toppings, uses of chocolate, and appropriate presentation methods for various types of desserts.	Prerequisites: None.	LEC 3.0 3.0 3.0

CUL105	Principles of Professional Cooking	Introductory principles and skills for professional cooking. Introduces organizational structure of kitchen staff in different types of kitchens. Includes basic principles of safety and sanitation, equipment and utensil use, French cooking terms, recipe use, measuring techniques, identification and use of seasoning agents, and basic cooking methods applied to stocks, sauces and soups, vegetables, starches, entrees, and eggs. Emphasis on practical experiences in a commercial kitchen.	Prerequisites: None.	L+L 3.0 5.0 5.0
CUL107	Principles and Techniques of Garde Manger	Prepares students for employment in garde manger pantry positions in restaurants and resorts. Includes costing out and ordering food products; food and safety factors; preparing and garnishing pantry product. Emphasis on classical food presentation.	Prerequisites: A grade of C or better in CUL105 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL109	Menu Planning Development	Principles and techniques of menu planning for food service operations where food is served in quantity; includes applications for health care institutions, commercial kitchens, school cafeterias, and industrial facilities.	Prerequisites: None.	LEC 2.0 2.0 2.0
CUL111	Purchasing for Food Service Systems	Food purchasing for institutions: cost factors, quality standards, purchasing practices and controls.	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL113	Commercial Baking Techniques	Principles and techniques for preparation, storage, and serving of bakery products. Includes breads, cakes, pies, pastry, cookies, fillings, and icings. Emphasis on practical experiences in a commercial bakery.	Prerequisites: None.	L+L 3.0 5.0 5.0

CUL115	Food Service Sanitation, Safety and Stewarding	Focuses on the theory and practice of food service safety and sanitation. Emphasis on understanding and applying the Hazard Analysis Critical Control Points (HACCP) concept. Reviews legal elements of food service sanitation based on requirements and recommendations of Maricopa County Health Department. Focuses on stewarding as an important kitchen support service with emphasis on appropriate practices and principles of receiving food and product rotation	Prerequisites: None.	LEC 2.0 2.0 2.0
CUL117	Catering - Planning and Production	Focuses on the basic steps of the catering process in a commercial food setting. Includes a review of safety and sanitation principles. Emphasizes practical experiences in booking and record keeping, planning, ordering, production, and service set-up and break-down for both in-house and off-premise catered events.	Prerequisites: A grade of C or better in CUL105.	LAB 1.0 3.0 3.0
CUL119	Baking Theory and Retail Operations	Baking principles to include detailed study of ingredients, heat transfer, and recipe conversions. Basic business operations for a retail bakery including bakery product line and floor plan design.	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL120	Food Costing, Purchasing and Inventory Control	Basic skills necessary to understand and utilize cost controls. Focus on measurements, recipe costing and yield analysis. Application of systems and practices for efficient food purchasing, storage, production, budgeting and inventory.	Prerequisites: None.	L+L 3.0 3.0 3.0
CUL121	Principles of Food and Beverage Service	Qualities and skills necessary for successful food and beverage service. Includes room planning and setup, duties of service staff, types of service, customer relations, dining room etiquette, and cash management.	Prerequisites: None.	LEC 3.0 3.0 3.0

CUL123	Customer Service Practicum	Professional food and beverage experience in a commercial food service operation. Focuses on food server, host/hostess, cashier, and busperson. Includes beverage preparation, application of sanitation, and safety concepts. Stresses professionalism in service, demeanor, and appearance.	Prerequisites: A grade of C or better in FON104.	L+L 4.0 11.0 11.0
CUL123AA	Customer Service Practicum	Professional food and beverage experience in a commercial food service operation. Focuses on food server, host/hostess cashier, busperson. Includes beverage preparation, application of sanitation and safety concepts. Stresses professionalism in service, demeanor, and appearance.	Prerequisites: A grade of C or better in FON104 and Permission of Department or Division.	L+L 1.0 4.0 0.0
CUL123AB	Customer Service Practicum	Professional food and beverage experience in a commercial food service operation. Focuses on food server, host/hostess cashier, bus person. Includes beverage preparation, application of sanitation and safety concepts. Stresses professionalism in service, demeanor, and appearance.	Prerequisites: None.	L+L 2.0 5.0 5.0
CUL127	Classical Desserts	Advanced principles and techniques in commercial baking and dessert preparation. Focus on fine pastries with European flair and on desserts served in better hotels, restaurants, and resorts. Preparation of macaroons, tarts, puff pastries, specialty cakes, and desserts such as Bavarian creams, mousses, custards, souffles, crepe desserts, and flammeries. Preparation and use of sauces, techniques for using nuts and chocolate, and exploration of new recipes.	Prerequisites: A grade of C or better in CUL113, or permission of Program Director.	L+L 3.0 5.0 5.0

CUL130	Savory Foods I	Studies all facets of hot foods with an emphasis on French and regional cooking techniques; including vegetable preparation, stocks, sauces, and soups. Reviews ingredients, production and plating techniques that are unique to contemporary, international and regional cuisines.	Prerequisites: None.	L+L 6.0 7.5 7.5
CUL131	Customer Services in Food Service Systems	Customer service principles and procedures in commercial food service operations. Focuses on experiences in busing, waiter/waitressing, hosting, and beverage preparation in a coffee shop or at catered events. Emphasis on professionalism. Includes principles of safety and sanitation.	Prerequisites: None.	LAB 1.0 3.0 3.0
CUL137	Specialty Breads and Breakfast Pastry	The preparation of classical and artisan breads using advanced production techniques and skills. Classic breakfast pastry, with the production of laminated doughs, sweet doughs, and rich yeast doughs to include Danish, croissant, puff pastry, brioche, and other international classics. Completion of edible centerpieces made out of various styles of bread.	Prerequisites: A grade of C or better in CUL113 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL140	Culinary Principles and Kitchen Management I	Historical background of the culinary profession and food components. Overview of kitchen administration and responsibilities. Includes food history, terminology, tools and equipment, food preparation, tasting and sensory evaluation, stocks and sauces, herbs and spices, chocolates, vegetables, fruits, pasta, grains and cheeses	Prerequisites: None.	LEC 3.0 3.0 3.0

CUL145	Banquet Food and Beverage Service Externship	Waiter/waitress serving experiences in a banquet setting; includes instructor-assisted placement, orientation, job seeking skills, and working a minimum of four banquets or twenty-four hours in banquet service. Professional appearance and attire required.	Prerequisites: A grade of C or better in CUL121, CUL123, and FON104.	LAB 1.0 5.0 0.0
CUL150	Garde Manger I	Provides a foundation in Garde Manger. Includes equipment, sanitation and safety, production, salads, emulsified and non-emulsified dressings, sandwiches, cold sauces, salad condiments, knife skills, cleaning of salad greens and spice and herb identification. Studies culinary terms and presentation techniques. Teaches cooking techniques such as poaching, sauteing, and grilling in the context of Garde Manger work.	Prerequisites: None.	L+L 2.0 3.5 3.5
CUL160	Bakery I	Theory and practice of operating a bakery or pastry shop in a hotel or restaurant kitchen. Provides experience in planning, ordering, scheduling and producing fine French and American pastries and baked goods. Emphasis on rapid, high-quality hand production of doughs, creams, fillings, cookies and breads.	Prerequisites: None.	L+L 3.0 7.5 7.5
CUL170	Dining Room Operations I	Focuses on theory and practice of operating a casual dining room; includes set-up and clean-up, food and beverage service, proper etiquette, point-of-sale operation and presenting guest checks. Emphasis on service techniques, including buffet and banquet set-ups, and customer accommodations.	Prerequisites: None.	L+L 3.0 5.8 5.8

CUL180	Food In History	Focuses on the history of foodstuffs, the story of cuisine and the social history of eating. Includes the relationship between people and what they eat, between particular foods and social behavior, and between dietary habits, customs and methods of cooking	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL190	Catering Operations I	Studies theory and practice of planning and executing catering functions; includes initial customer contact and follow-up, room set-up and scheduling, menu and incidental planning event execution and breakdown, billing and post-event follow up	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL201	International Cuisine	Gourmet international food preparation applied to restaurants. Review principles of sanitation and safety. Explores history and customs, serving styles, and preparation techniques of foods unique to selected international cultures. Emphasis on practical cooking experiences in a restaurant kitchen. Cultures to include, but not limited to: Italian, German, Oriental, Middle Eastern, and Spanish.	Prerequisites: A grade of C or better in CUL105 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL203	American Regional Cuisine	American regional food preparation applied to restaurants. Review principles of sanitation and safety. Explores history and customs, serving styles, and preparation techniques of foods unique to selected American regions. Emphasis on practical cooking experiences in a restaurant setting. American regions to include, but not limited to: Southern, Cajun/Creole, New England, Mid-West, and Pacific Coast.	Prerequisites: A grade of C or better in CUL105 or permission of Program Director.	L+L 3.0 5.0 5.0



CUL205	French Cuisine	Principles of French cooking applied to restaurant kitchens. Includes review of safety and sanitation principles, orientation to French culture, use of French terms and recipes, and reading French menus. Emphasis on practical experiences in preparing French meals in a restaurant kitchen. Introduces preparation of appetizers, hors-d'oeuvres, charcuterie items, pastries, and desserts.	Prerequisites: A grade of C or better in CUL105 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL207	Pacific Rim Cuisine	Local and gourmet Pacific Rim food preparation applied to restaurants. Overview of principles of sanitation and safety. Explores history and customs, serving styles, and preparation techniques of foods unique to Pacific Rim cultures. Emphasis on practical cooking experiences in a restaurant kitchen. Cultures to include, but not limited to Chinese, Japanese, Thai, Korean, and South Pacific islands.	Prerequisites: A grade of "C" or better in CUL105.	L+L 3.0 5.0 5.0
CUL209	Italian Cuisine	Principles of Italian cooking applied to restaurant kitchens. Includes review of safety and sanitation principles, orientation to Italian culture, use of Italian terms and recipes, and reading Italian menus. Emphasis on practical experiences in preparing Italian meals in a restaurant kitchen. Introduces preparation of appetizers, entrees, salads, fresh pasta items, pastries, and desserts.	Prerequisites: A grade of "C" or better in CUL105.	L+L 3.0 5.0 5.0
CUL210	Menu Planning and Facilities Design	Principles and techniques of menu planning and restaurant design for food service operations. Includes applications for health care institutions, commercial kitchens, and industrial facilities. Studies building codes and examines the relationships among equipment, staff and customers in the design of a facility	Prerequisites: None.	LEC 2.0 2.0 2.0

CUL211	Professional Cooking Practicum	Preparation of hot and cold foods in a commercial food service operation; experience in volume food production preparing salads, soups, stocks, sauces, entrees, starches, and vegetables; designed to develop knowledge and skills necessary to cook in a variety of commercial kitchens.	Prerequisites: A grade of C or better in (CUL105 and FON104) or permission of Department or Division.	L+L 7.0 19.0 19.0
CUL211AA	Professional Cooking Practicum	Preparation of hot and cold foods in a commercial food service operation; experience in volume food production preparing salads, soups, stocks, sauces, entrees, starches, and vegetables; designed to develop knowledge and skills necessary to cook in a variety of commercial kitchens.	Prerequisites: A grade of C or better in CUL105, FON104, and permission of Department or Division.	L+L 1.0 3.0 0.0
CUL211BA	Professional Cooking Practicum	Preparation of hot and cold foods in a commercial food service operation; experience in volume food production preparing salads, soups, stocks, sauces, entrees, starches, and vegetables; designed to develop knowledge and skills necessary to cook in a variety of commercial kitchens.	Prerequisites: A grade of C or better in (CUL105 and FON104) or permission of Department or Division. Corequisites: CUL211BB.	L+L 4.0 11.0 11.0
CUL211BB	Professional Cooking Practicum	Preparation of hot and cold foods in a commercial food service operation; experience in volume food production preparing salads, soups, stocks, sauces, entrees, starches, and vegetables; designed to develop knowledge and skills necessary to cook in a variety of commercial kitchens.	Prerequisites: A grade of C or better in (CUL105 and FON104) or permission of Department or Division. Corequisites: CUL211BA.	L+L 3.0 6.0 6.0

CUL213	Buffet Catering	Focuses on the basic steps of the catering process in a commercial food setting. Includes an overview of safety and sanitation principles. Emphasizes practical experiences in booking and record keeping, function planning, ordering, production, and service set-up and breakdown for both in-house and off-premise catered events.	Prerequisites: A grade of C or better in CUL105 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL215	Advanced Pastry Arts	Advanced pastry arts and decorative work as applied to showpieces and special occasion cakes. Includes sugar work such as pulled, blown, and poured as well as the use of tempered and modeling chocolate. Design and execution of a three-tier wedding cake as well as work on a special occasion and team wedding cake using gum paste, pastillage, chocolate, or marzipan. Includes desserts for special diets and spa desserts.	Prerequisites: A grade of C or better in CUL113 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL217	Wedding Cake Production	Basic and advanced execution for special occasion, wedding, and groom's cakes to include initial design work, baking, icing, and advanced finishing techniques to include the use of fondant and gum paste. Enhancement of cakes to include basic sugar, pastillage, and chocolate decoration.	Prerequisites: A grade of C or better in CUL113 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL219	Professional Pastry Techniques	Advanced production techniques for plated desserts, frozen desserts, modern and classical gateaux, petits fours, and chocolates.	Prerequisites: A grade of C or better in CUL113 or permission of Program Director.	L+L 3.0 5.0 5.0
CUL220	Food Service Nutrition	Study of basic nutrition concepts with an emphasis on the nutritional concerns of restaurants and other types of food service operations. Focuses on nutrients in foods, the relationships to other nutrients and the planning of well-balanced menus throughout the life cycle	Prerequisites: None.	LEC 2.0 2.0 2.0

CUL223	Food Service Management	Administrative procedures and personnel relationships: Management of materials costs, record keeping and legal aspects of food and beverage service operations.	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL225	Supervisory Functions in Food Service	Principles and techniques of supervision applied to food service workers. Includes roles and responsibilities of a food service supervisor, basic theories of management, line staffing functions, basic concepts of communication, motivation techniques, problem-solving, labor relations and laws, performance evaluation and basic record keeping functions in food service settings.	Prerequisites: None.	LEC 3.0 3.0 3.0
CUL230	Savory Foods II	Hot food product utilization, preparation and display for contemporary, continental kitchen. Focuses on classical preparation skills with an emphasis on contemporary and international flavors in food production. Students also practice organization, communication, teamwork and plating skills. Food production includes the creation of appetizers, hors d'oeuvres, salads, and salad dressings; the use of grains and legumes; the production of charcuterie; and the creation of display pieces in both catering and kitchen environments.	Prerequisites: A grade of C or better in CUL130.	L+L 6.0 7.0 7.0
CUL231AA	Culinary Studies Internship	Work experience preparing hot and cold foods in a commercial food service operation, experience in volume food production preparing salads, soups, stocks, sauces, entrees, starches, and vegetables. Five (5) hours of work weekly. Supervision and evaluation by an internship coordinator.	Prerequisites: A grade of C or better in CUL105, FON104, and permission of Department or Division.	LAB 1.0 5.0 0.0

CUL231AB	Culinary Studies Internship	Work experience preparing hot and cold foods in a commercial food service operation, experience in volume food production preparing salads, soups, stocks, sauces, entrees, starches, and vegetables. Ten (10) hours of work weekly. Supervision and evaluation by an internship coordinator.	Prerequisites: A grade of C or better in CUL105, FON104, and permission of Department or Division.	LAB 2.0 10.0 0.0
CUL231AC	Culinary Studies Internship	Work experience preparing hot and cold foods in a commercial food service operation, experience in volume food production preparing salads, soups, stocks, sauces, entrees, starches, and vegetables. Fifteen (15) hours of work weekly. Supervision and evaluation by an internship coordinator.	Prerequisites: A grade of C or better in CUL105, FON104, and permission of Department or Division.	LAB 3.0 15.0 0.0
CUL235	Advanced Culinary Techniques I - Meats	Theory and practice of the varied uses and preparation of protein products. Emphasis on butchering, creating stocks, soups and sauces, cooking methodologies, cost effective applications, plating and selection of appropriate accompaniments and garnishes.	Prerequisites: A grade of C or better in CUL230 or industry equivalent.	L+L 2.0 2.0 2.0
CUL236	Advanced Culinary Techniques II - Seafood	Theory and practice of the varied uses and preparation of seafood products. Emphasis on butchering, creating stocks, soups and sauces, cooking methodologies, cost-effective applications, plating and selection of appropriate accompaniments and garnishes.	Prerequisites: A grade of C or better in CUL230 or industry equivalent.	L+L 2.0 2.0 2.0
CUL237	Advanced Culinary Techniques III - Game and Poultry	Theory and practice of the varied uses and preparation of game and poultry products. Emphasis on butchering, creating stocks, soups and sauces, cooking methodologies, cost effective applications, plating and selection of appropriate accompaniments and garnishes.	Prerequisites: A grade of C or better in CUL230 or industry equivalent.	L+L 2.0 2.0 2.0

CUL240	Culinary Principles and Kitchen Management II	Advanced culinary and management practices instruction. Emphasis on principles and terminology used in contemporary kitchens. Identification and use of fish and shellfish and game. Understanding of wine, beer and spirits. Study of diversity of international cuisines and menu development. Special emphasis on management functions and practices for kitchen supervisors and chefs, staff hiring, training and evaluation, point of sale system components, cost accounting procedures, legal regulations and maintenance of records to understand and control profit and loss.	Prerequisites: A grade of C or better in CUL140.	LEC 3.0 3.0 3.0
CUL245	Professional Kitchen Management Techniques	Theory and practice of the key elements of kitchen leadership. Emphasis on identifying leadership and communication skills, understanding employment laws, establishing performance criteria, developing accountability, utilizing motivational procedures and training practices, controlling labor and food costs, maintaining guest satisfaction and bottom line profits.	Prerequisites: A grade of C or better in CUL240 or industry equivalent.	L+L 2.0 2.0 2.0
CUL250	Garde Manger II	Refinement of skills required in a Garde Manger Department. Preparation of appetizers, hors d'oeuvres, salads, salad dressings, use of grains and legumes, production of charcuterie and display pieces. Emphasis placed on eye appeal, texture, color contrast, artistic touch, taste and processing. Includes study of production and storage of ingredients, sanitation and hygiene standards	Prerequisites: A grade of C or better in CUL150.	L+L 2.0 4.0 4.0

CUL255	Advanced Garde Manger I - Salads and Sandwiches	Theory and practice of creating simple and complex salads and sandwiches. Emphasis on use of multiple ingredients for hot and cold products, dressings, emulsified oils and vinegars, condiments, production methodologies, cost effective applications, plating and appropriate accompaniments and garnishes.	Prerequisites: A grade of C or better in CUL250 or industry equivalent.	L+L 2.0 2.0 2.0
CUL256	Advanced Garde Manger II - Appetizers and Hors d'oeuvres	Theory and practice of the key elements in production of appetizers and hors d'oeuvres. Emphasis on ingredient selection, flavor combinations, preparation methodologies, cost effective applications, displaying, garnishing and plating.	Prerequisites: A grade of C or better in CUL250 or industry equivalent.	L+L 2.0 2.0 2.0
CUL260	Bakery II	Focuses on theory and practice of operating a bakery or pastry shop in a hotel or restaurant kitchen. Provides experience in planning, ordering, scheduling and producing fine French and American pastries and baked goods. Emphasis placed on rapid, high-quality hand production and assembly of breads, desserts and garnishes.	Prerequisites: A grade of C or better in CUL160.	L+L 3.0 2.0 2.0
CUL265	Professional Baking I - Base Products and Sauces	Theory and practice of the preparation of base products and sauces. Emphasis on creating finished products using basic components, creating sauces, and study of cooking methodologies, cost effective applications and plating techniques.	Prerequisites: A grade of C or better in CUL260 or industry equivalent.	L+L 2.0 2.0 2.0

CUL266	Professional Baking II - Breads and Rolls	Theory and practice of cooking techniques and procedures in the preparation of breads and rolls. Emphasis on hands-on production of scratch recipes, understanding formulas, ratios and ingredient interaction for producing high quality breads and rolls, cooking methodologies, and cost-effective applications. Focus on production of yeast-leavened breads, quick breads, laminated dough, unleavened dough and artisan style breads.	Prerequisites: A grade of C or better in CUL260 or industry equivalent.	L+L 2.0 2.0 2.0
CUL267	Professional Baking III - Pastries, Pies and Cakes	Theory and practice of the preparation of complex pastries, pies and cakes. Emphasis on cooking methodologies, high quality cost effective applications, and visually dramatic plating and garnishing techniques.	Prerequisites: A grade of C or better in CUL260 or industry equivalent.	L+L 2.0 2.0 2.0
CUL268	Professional Baking IV - Decorative and Design Work	Theory and practice of the varied uses and preparation of chocolate and sugar as decorative items. Emphasis on applications for advanced show work, cooking methodologies, cost effective applications for plated desserts and use as appropriate display pieces.	Prerequisites: A grade of C or better in CUL260 or industry equivalent.	L+L 2.0 2.0 2.0
CUL270	Dining Room Operations II	Theory and practice of operating a formal dining room, including set-up and clean-up, food and beverage service, proper etiquette and tableside food preparation. Emphasis on formal etiquette and service practices for a dining room including buffet and banquet set-up and managerial duties	Prerequisites: A grade of C or better in CUL170.	L+L 3.0 6.0 6.0



CUL296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
CUL296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
CUL296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

CUL296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
CUL298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CUL298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

CUL298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
CWE198AA	Career/Work Experience	Participation in a work experience, gaining on-the-job training, and/or exploring a career or field of choice. Helps students relate their education to the real work world. Resume writing and interviewing skills. Development of employability skills	Prerequisites: None.	L+L 1.0 1.0 1.0
CWE198AB	Career/Work Experience	Participation in a work experience, gaining on-the-job training, and/or exploring a career or field of choice. Helps students relate their education to the real work world. Resume writing and interviewing skills. Development of employability skills	Prerequisites: None.	L+L 2.0 2.0 2.0
CWE198AC	Career/Work Experience	Participation in a work experience, gaining on-the-job training, and/or exploring a career or field of choice. Helps students relate their education to the real work world. Resume writing and interviewing skills. Development of employability skills	Prerequisites: None.	L+L 3.0 3.0 3.0

CWE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
CWE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
CWE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

DAE112	Dental Assisting I	Introduction to general dentistry, dental sciences, and basic preclinical dental assisting theory and skills. Topics include dental anatomy, recording oral conditions, infection control, patient preparation, communication, patient safety and comfort, emergency management, four-handed dentistry concepts and the use and maintenance of dental equipment, and development of professional behaviors.	Prerequisites: Acceptance into the Dental Assisting Program or permission of Program Director.	LEC 7.0 7.0 7.0 LAB 0.0 10.0 10.0
DAE124	Dental Radiography	Physics of radiography, theory of radiation production, exposure techniques, radiation protection, digital image production, film processing, mounting, and interpretation of radiographs.	Prerequisites: A grade of C or better in DAE156 or permission of Program Director. Corequisites: DAE131 or permission of Program Director.	LEC 2.0 2.0 2.0
DAE131	Dental Radiography Laboratory	Radiation safety and infection control procedures for operator and patient. Image receptor placement, exposure, processing, mounting, and evaluation of dental radiographs. Operation and maintenance of x-ray and processing equipment. Interpretation of radiographic findings.	Prerequisites: A grade of C or better in DAE156 or permission of Program Director. Corequisites: DAE124 or permission of Program Director.	LAB 2.0 6.0 6.0
DAE140	Dental Issues Seminar	Examination of legal and ethical responsibilities of dental team members. Review and analysis of clinical procedures in general and specialty practices. Includes professional and career development strategies and certification information and processes.	Prerequisites: A grade of C or better in DAE156 or permission of Program Director. Corequisites: (DAE224, DAE225, DAE226, DAE227, and DAE228) or permission of Program Director.	LEC 1.0 1.0 1.0
DAE156	Dental Assisting II	Intermediate dental assisting skills, with an emphasis in treatment provided in general dentistry, including an introduction to dental diseases and their prevention, and preparing for and assisting in general dental restorative procedures, including the use of local anesthetics, dental materials, and pharmacological agents for procedures. Introduction to ethics and the legal aspects of dental practices.	Prerequisites: A grade of C or better in DAE112 or permission of Program Director.	LEC 7.0 7.0 7.0 LAB 0.0 10.0 10.0

DAE160	Orientation to Clinical Dental Assisting	Overview of dentistry. Roles of the clinical dental assistant and team members covered. Education and licensure requirements, ethics and professional organizations also covered. State Board of Dental Examiners and dental assistant regulations reviewed. History of dentistry and services provided by general and specialty practices also included.	Clinical Dental Assisting Program Admission.	LEC 1.0 1.0 1.0
DAE162	Introduction to Dental Office Management	Overview of the role of a dental administrative assistant. Includes the daily operations and procedures of dental office management. Interpersonal communication techniques and psychological factors related to patient management emphasized. Systems for management of patient records, accounts receivable, insurance and fee collection, recall, supply inventory, and ordering covered. Overview of computers used in a dental office included.	Prerequisites: None.	LEC 3.0 3.0 3.0
DAE164	Introduction to Dentistry and Dental Office	Overview of dentistry and general dental office procedures. Roles of the team members covered. Education and licensure requirements, ethics, and professional organizations also covered. State Board of Dental Examiners and regulation agencies, as well introduction to dental terminology included.	Prerequisites: None.	LEC 1.0 1.0 1.0
DAE166	Infection Control and Hazard Communication	Introduction to infection control and hazard communication for the dental practice. Infection control mandates according to the Occupational Safety and Health Administration (OSHA), the American Dental Association (ADA), and the Center for Disease Control and Prevention (CDC) covered. Procedures related to infection control emphasized.	Prerequisites: A grade of C or better in DAE162 or DAE164 or permission of Instructor.	L+L 2.0 3.0 3.0

DAE168	Dental Anatomy and Pathology	Overview of human anatomy and pathology for the dental assistant. Structural organization and systems of the body covered. Identification of anatomy and landmarks of the head, neck, and orofacial structures emphasized. Dental pathology also covered	Prerequisites: A grade of C or better in DAE166 or permission of Instructor.	L+L 3.0 4.0 4.0
DAE170	Dental Practice Emergencies and Patient Management	The role of the dental assistant in clinical patient management. Medical-dental health history interpretation. Obtaining and recording vital signs. Drug references, methods of administration, anesthetic, and patient prescriptions covered. Prevention techniques and management of emergencies in the dental environment. Management of the medically compromised also included.	Prerequisites: A grade of C or better in DAE168 or permission of Instructor.	LEC 1.0 1.0 1.0
DAE172	Dental Materials	Identification and description of dental materials covered. Manipulation of restorative, impression, laboratory, and adjunct dental materials emphasized.	Prerequisites: A grade of C or better in DAE168 or permission of Instructor.	L+L 3.0 5.0 5.0
DAE212	Dental Assisting III	Advanced dental assisting skills, with an emphasis in assisting for dental specialty procedures, including pediatrics, endodontics, periodontics, orthodontics, prosthodontics, and oral and maxillofacial surgery. Additional emphasis will be on expanded functions procedures performed by the dental assistant, as well as patient records management and pharmacology related to dental treatment procedures.	Prerequisites: A grade of C or better in DAE156 or permission of Program Director.	LEC 2.0 2.0 2.0 LAB 0.0 2.0 2.0
DAE224	General Clinical Practice	Placement of students in general practice dental facilities for supervised practical experience.	Prerequisites: A grade of C or better in DAE112 and DAE156, or Permission of Program Director. Corequisites: DAE140 or permission of Program Director.	LAB 1.0 5.0 0.0

DAE225	Pediatric Clinical Practice	Placement of students in pediatric dental facilities for supervised practical experience.	Prerequisites: A grade of C or better in DAE112 and DAE156, or Permission of Program Director. Corequisites: DAE140 or permission of Program Director.	LAB 1.0 5.0 0.0
DAE226	Periodontal Clinical Practice	Placement of students in periodontal facilities for supervised practical experience.	Prerequisites: A grade of C or better in DAE112 and DAE156, or Permission of Program Director. Corequisites: DAE140 or permission of Program Director.	LAB 1.0 5.0 0.0
DAE227	Orthodontic Clinical Practice	Placement of students in orthodontic facilities for supervised practical experience.	Prerequisites: A grade of C or better in DAE112 and DAE156, or Permission of Program Director. Corequisites: DAE140 or permission of Program Director.	LAB 1.0 5.0 0.0
DAE228	Oral and Maxillofacial Surgery Clinical Practice	Placement of students in oral and maxillofacial surgical facilities for supervised practical experience.	Prerequisites: A grade of C or better in DAE112 and DAE156, or Permission of Program Director. Corequisites: DAE140 or permission of Program Director.	LAB 1.0 5.0 0.0
DAE230	Clinical Dental Assisting I	Fundamental skills for clinical dental assisting. General dentistry office design, operation and maintenance of dental equipment, 4-handed delivery system, and dental instruments covered. New patient examination, prophylaxis, amalgam restoration, composite restoration, composite veneer, and tooth-whitening procedures. Placement of matrix band and wedge, and rubber dam. Role of dental assistant for patient procedures emphasized.	Prerequisites: A grade of C or better in DAE172 or permission of Instructor.	L+L 2.0 3.0 3.0



DAE232	Clinical Dental Assisting II	Specialty and expanded skills for clinical dental assisting. Fixed prosthetics preparation and cementation, removable prosthetics, endodontics, periodontics, orthodontics, oral and maxillofacial surgeries. Placement of sealants, retraction cord, periodontal dressing, and provisional restorations. Removal of excess permanent cement.	Prerequisites: A grade of C or better in DAE230 or permission of Instructor.	L+L 2.0 4.0 4.0
DAE240	Dental Radiographic Imaging	Dental radiographic imaging. Diagnostic value of radiographs, image geometry, exposure techniques, processing of intra-oral and extra-oral radiographs covered. X-ray production, exposure factors, and image characteristics emphasized. Identification of image defects and corrective measures. Biological effects of x-radiation, radiation safety, digitized radiography, infection control procedures, and legal implications also covered.	Admission to the Clinical Dental Assisting Program or permission of Department or Division.	L+L 3.0 4.0 4.0
DAE242	Clinical Dental Assisting I: Basic Skills	Fundamental skills for clinical dental assisting. General dentistry office design, operation and maintenance of dental equipment, 4-handed delivery system, and dental instruments covered. New patient examination, amalgam restoration, composite restoration, fixed prosthodontic restoration, endodontic treatment, and tooth-whitening procedures included. Role of dental assistant for patient procedures emphasized.	Prerequisites: A grade of C or better in (DAE170 and DAE172).	L+L 3.0 5.0 5.0

DAE244	Fundamentals of Basic Clinical Skills	Clinical dental assisting skills performance in a clinical laboratory setting as well as in general practice dental facilities for supervised practical experience. Safe work practices, infection control, dental radiography, basic chairside assisting, patient management, dental materials manipulation, business assisting, equipment operation and maintenance, and dental laboratory skills emphasized.	Prerequisites: A grade of C or better in DAE240 and DAE242. Corequisites: DAE246, DAE285 and DAE290.	LAB 1.0 5.0 0.0
DAE246	Clinical Dental Assisting II: Advanced Skills	Supervised clinical and laboratory experience. Advanced techniques and expanded functions for clinical dental assisting. Placement of sealants, retraction cord, periodontal dressing, rubber dam, matrix and wedge, bases, liners, varnishes, and provisional restorations. Removal of excess permanent cement and sutures. Determine tooth shade and shape. Performance of coronal polishing procedure.	Prerequisites: None. Corequisites: DAE244.	L+L 3.0 5.0 5.0
DAE248	Clinical Dental Assistant Practicum	Clinical dental assisting skills performance in a clinical laboratory. Safe work practices, infection control, dental radiography, chairside assisting, expanded dental assisting skills, patient management, dental materials manipulation, and dental laboratory skills emphasized. Operation and maintenance of dental equipment also covered.	Prerequisites: A grade of C or better in DAE240 or permission of Instructor.	LAB 1.0 3.0 3.0
DAE256	Dental Assisting IV	Advanced dental assisting sciences, with an emphasis in the recognition of oral pathologies, use of technology in dentistry, intermediate dental office management skills, and legal considerations for the practice of dentistry. Additional emphasis will be placed on coronal polishing and community oral health.	Prerequisites: A grade of C or better in DAE212 or permission of Program Director.	LEC 2.0 2.0 2.0 LAB 0.0 2.0 2.0

DAE285	Clinical Dental Assisting Seminar	Overview of special topics in clinical dental assisting. Clinical internship evaluation included. Covers expanded functions, legal responsibilities and liabilities. One hundred (100) hours of designated work required.	Prerequisites: None. Corequisites: DAE290.	L+L 2.0 2.0 0.0
DAE290	Internship for Clinical Dental Assistants	Perform clinical dental assisting skills within a dental practice setting. Practice safety and infection control, clinical and expanded dental assisting, patient management, laboratory skills, business assisting, equipment operation, and maintenance. Operate within practice standards, and record and evaluate internship experience. Two hundred (200) hours of designated work required.	Prerequisites: Permission of Program Director. Corequisites: DAE285.	L+L 4.0 4.0 4.0
DAE292	Dental Specialties	Placement of students in dental facilities for supervised practical experience exposing them to: Endodontic, Oral and Maxillofacial Surgery, Orthodontic, Pediatric, Periodontic, and Prosthodontic specialty procedures.	Prerequisites: None. Corequisites: DAE244.	LAB 2.0 10.0 0.0
DAE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

DAE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
DAE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
DAH100	Introduction to Dance	Overview of the field of dance focusing on origins, historical development, and cultural characteristics of the various styles of dance	Prerequisites: None.	LEC 3.0 3.0 3.0
DAH101	Introduction to Dance Through History	Survey of dance throughout history examining the interplay between the cultural, social and political climate of the time and its expression in dance.	Prerequisites: None.	LEC 3.0 3.0 3.0
DAH110	Dance in Film	Survey of the history and development of dance in film and video including basic film technology and critical analysis and evaluation	Prerequisites: None.	LEC 3.0 3.0 3.0
DAH190	Discovering Dance Careers	An overview of the professional opportunities available in dance and dance related fields	Prerequisites: None.	LEC 1.0 1.0 1.0

DAH201	World Dance Studies	Exploration, analysis, synthesis, and evaluation of the role of dance in various cultures around the world.	Prerequisites: None. DAH100 strongly suggested but not required.	LEC 3.0 3.0 3.0
DAH250	Dance in Popular Culture	Interdisciplinary approach investigating diverse cultural dance practices that have shaped American popular culture from the late 19th century to the present. Highlights issues of power, class, race, ethnicity, gender, age and sexuality. Emphasis is on revealing diverse cultural influences in U.S. popular culture.	Prerequisites: None.	LEC 3.0 3.0 3.0
DAH255	Hip Hop: Arts, Aesthetic and Culture	Selective survey and historico-cultural analysis of hip hop arts, aesthetics and culture organized around the founding elements of DJing, MCing, B-boy and B-girling, graffiti arts and knowledge.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
DAN101AA	Social Dance: Ballroom	Theory and practice of Ballroom dance. Development of movement quality and performance skills individually, with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 2.0 2.0
DAN101AB	Social Dance: Swing	Theory and practice of Swing dance. Development of movement quality and performance skills individually, with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 2.0 2.0
DAN101AC	Social Dance: Latin	Theory and practice of Latin dance. Development of movement quality and performance skills individually, with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 2.0 2.0
DAN101AD	Social Dance: Country	Theory and practice of Country dance. Development of movement quality and performance skills individually, with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 2.0 2.0
DAN101AE	Social Dance: Tango	Theory and practice of Tango dance. Development of movement quality and performance skills individually, with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 2.0 2.0

DAN102AA	Hip Hop I	Theory and practice of Hip Hop dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN102AB	Hip Hop II	Theory and practice of Hip Hop dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN102AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN103AA	Break Dancing I	Theory and practice of Break Dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN103AB	Break Dancing II	Theory and practice of Break Dancing at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN103AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN104AA	Ballroom I	Theory and practice of Ballroom dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN104AB	Ballroom II	Theory and practice of Ballroom dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN104AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN105AA	Swing I	Theory and practice of Swing dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN105AB	Swing II	Theory and practice of Swing dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN105AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN106AA	Latin I	Theory and practice of Latin dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN106AB	Latin II	Theory and practice of Latin dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN106AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN107AA	Country I	Theory and practice of Country dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0

DAN107AB	Country II	Theory and practice of country dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN107AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN108AA	Tango I	Theory and practice of Tango dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN108AB	Tango II	Theory and practice of Tango dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN108AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN115	Dance Trends	Theory and practice of current social dance trends. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120	World Dance	Theory and practice of world dance. Development of movement quality and performance skills, individually, with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AA	World Dance: African Dance	Theory and practice of African dance. Development of movement quality and performance skills, individually or in a group setting. May include African, Caribbean or Afro-fusion dance.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AB	World Dance: Flamenco	Theory and practice of Flamenco. Development of movement quality and performance skills, individually, with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AC	World Dance: Irish Dance	Theory and practice of Irish Dance. Development of movement quality and performance skills, individually or in a group setting.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AD	World Dance: Mexican Folkloric Dance	Theory and practice of Mexican Folkloric dance. Development of movement quality and performance skills, individually with a partner or in a group setting.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AE	World Dance: Middle Eastern Dance	Theory and practice of Middle Eastern dance. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0

DAN120AF	World Dance: Afro-Brazilian Dance	Theory and practice of Afro-Brazilian dance. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AG	World Dance: East Indian Dance	Theory and practice of East Indian dance. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AH	World Dance: Native American Dance	Theory and practice of Native American dance. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AI	World Dance: European Folk Dance	Theory and practice of European Folk dance. Development of movement quality and performance skills individually or in a group setting.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AJ	World Dance: Asian Dance Forms	Theory and practice of Asian Dance Forms. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN120AK	World Dance: Capoeira	Theory and practice of Capoeira. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN129	Musical Theatre Dance I	Introduction to the theory and practice of musical theatre dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN130	Musical Theatre Dance II	Theory and practice of musical theatre dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN129 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN131	Ballet I	Introduction to the theory and practice of ballet at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN131PA	Ballet Basic Level	Dance training for personal skill development and interest. Introduction to the theory and practice of ballet at the basic level.	Prerequisites: None. Prior dance experience suggested but not required.	L+L 0.5 1.5 1.5



DAN132	Modern Dance I	Introduction to the theory and practice of modern dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN132PA	Modern Dance Basic Level	Dance training for personal skill development and interest. Introduction to the theory and practice of modern dance at the basic level.	Prerequisites: None. Prior dance experience suggested but not required.	L+L 0.5 1.5 1.5
DAN133	Jazz Dance I	Introduction to the theory and practice of jazz dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: None. Corequisites: DAN138 for dance majors.	L+L 1.0 3.0 3.0
DAN133PA	Jazz Basic Level	Dance training for personal skill development and interest. Introduction to the theory and practice of jazz dance at the basic level.	Prerequisites: None. Prior dance experience suggested but not required.	L+L 0.5 1.5 1.5
DAN134	Ballet II	Theory and practice of ballet at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN131 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN134PA	Ballet Beginning Level	Dance training for personal skill development and interest. Theory and practice of ballet at the beginning level.	Prerequisites: A grade of C or better in DAN131PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN135	Modern Dance II	Theory and practice of modern dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN132 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN135PA	Modern Dance Beginning Level	Dance training for personal skill development and interest. Theory and practice of modern dance at the beginning level.	Prerequisites: A grade of C or better in DAN132PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN136	Jazz Dance II	Theory and practice of jazz dance at the advanced beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN133 or permission of Instructor.	L+L 1.0 3.0 3.0

DAN136PA	Jazz Beginning Level	Dance training for personal skill development and interest. Introduction to the theory and practice of jazz dance at the beginning level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN133PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN140	Tap Dance I	An introduction to the theory and practice of tap dance.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN141	Dance Workshop	An intensive experience in the process of choreography, performance, and production elements.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN145	Tap Dance II	Theory and practice of tap dance at an advanced beginning level.	Prerequisites: A grade of C or better in DAN140 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN146	Tap Dance Ensemble	Introduction to the process and practice of dance performance, specific to the genre of tap dance.	Prerequisites: A grade of C or better in DAN140 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN150	Dance Performance I	An introduction to the process and practice of dance performance.	Prerequisites: None. Corequisites: Any level of any of the following dance technique courses with a DAN prefix: ballet, modern, jazz, hip hop, tap, social, or world dance.	L+L 1.0 3.0 3.0
DAN155	Dance Performance II	Continued study of the process and practice of dance performance at advanced beginning level.	Prerequisites: A grade of C or better in DAN150 or permission of Instructor. Corequisites: Any level of any of the following dance technique courses with a DAN prefix: ballet, modern, jazz, hip hop, tap, social, or world dance.	L+L 1.0 3.0 3.0
DAN164	Improvisation	An introduction to and an exploration of basic improvisational dance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN170	Dance Kinesiology	In-depth study of how the human body functions during dance movement both theoretically and practically. Attention given to correct body alignment and use while dancing, exploring each part of the body individually and analyzing the body as a whole.	Prerequisites: None. Corequisites: Any dance technique course.	LEC 3.0 3.0 3.0

DAN191	Viewing Dance	This course emphasizes developing critical analysis skills in order to find effective and intelligent ways of viewing and discussing choreography, dance for film, and lighting design for dance. Students will view masterpiece examples of choreography, dance for film, and lighting design from notable artists during the 20th and 21st centuries spanning various genres of dance.	Prerequisites: None.	L+L 1.0 1.0 1.0
DAN192	Digital Music for Dancers	Learn to use Digital Audio Workstation (DAW) software to edit and create music for dance performance and film as well as fix audio issues in music and sound.	Prerequisites: None.	L+L 1.0 1.0 1.0
DAN193	Professional Promotion for Dancers	An introduction to professional promotion for dancers. Design software and online applications will be used to manipulate photos and graphics in the creation of design projects for promotion.	Prerequisites: None.	L+L 1.0 1.0 1.0
DAN201AA	Special Topics: Dance	Exploration of current topics, issues and activities related to one or more aspects of dance.	Prerequisites: Permission of Instructor.	L+L 1.0 1.0 1.0
DAN201AB	Special Topics: Dance	Exploration of current topics, issues and activities related to one or more aspects of dance.	Prerequisites: Permission of Instructor.	L+L 2.0 2.0 2.0
DAN201AC	Special Topics: Dance	Exploration of current topics, issues and activities related to one or more aspects of dance.	Prerequisites: Permission of Instructor.	L+L 3.0 3.0 3.0
DAN202AA	Hip Hop III	Theory and practice of Hip Hop dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN102AB or permission of Instructor.	L+L 1.0 3.0 3.0
DAN202AB	Hip Hop IV	Theory and practice of Hip Hop dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN202AA or permission of Instructor.	L+L 1.0 3.0 3.0

DAN203AA	Break Dancing III	Theory and practice of Break Dancing at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN103AB or permission of Instructor.	L+L 1.0 3.0 3.0
DAN203AB	Break Dancing IV	Theory and practice of Break Dancing at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN203AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN204AA	Ballroom III	Theory and practice of Ballroom dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN104AB or permission of Instructor.	L+L 1.0 3.0 3.0
DAN204AB	Ballroom IV	Theory and practice of Ballroom dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN204AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN205AA	Swing III	Theory and practice of Swing dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN105AB or permission of Instructor.	L+L 1.0 3.0 3.0
DAN205AB	Swing IV	Theory and practice of Swing dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN205AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN206AA	Latin III	Theory and practice of Latin dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN106AB or permission of Instructor.	L+L 1.0 3.0 3.0
DAN206AB	Latin IV	Theory and practice of Latin dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN206AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN207AA	Country III	Theory and practice of Country dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN107AB or permission of Instructor.	L+L 1.0 3.0 3.0
DAN207AB	Country IV	Theory and practice of Country dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN207AA or permission of Instructor.	L+L 1.0 3.0 3.0

DAN208AA	Tango III	Theory and practice of Tango dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN108AB or permission of Instructor.	L+L 1.0 3.0 3.0
DAN208AB	Tango IV	Theory and practice of Tango dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN208AA or permission of Instructor.	L+L 1.0 3.0 3.0
DAN210	Dance Production I	Introduction to the elements of pre-production and production, including but not limited to production organization, production management, lighting design, and sound design as they relate to the art of dance.	Prerequisites: None.	L+L 3.0 3.0 3.0
DAN211	Dance Production II	Introduction to the theory and practice of makeup and costuming as they relate to dance	Prerequisites: None.	L+L 3.0 3.0 3.0
DAN220	Dance Career Preparation	This course provides foundational skills for employment in the field of dance including career research; development of promotional materials; interview and audition preparation; and entrepreneurial strategies for achieving educational and career goals.	Prerequisites: A grade of C or better in ENG101 or permission of Instructor.	L+L 3.0 3.0 3.0
DAN221	Rhythmic Awareness I	Exploration of rhythm in dance performance, choreography and pedagogy. Emphasis on the basic understanding of rhythm and cultivating awareness of rhythm in everyday life.	Prerequisites: None.	L+L 3.0 3.0 3.0
DAN222	Rhythmic Awareness II	Study at the intermediate level of rhythm and how it can be applied in dance and choreography. Emphasis on awareness of rhythm in everyday life as well as creative practice in rhythm and movement.	Prerequisites: A grade of C or better in DAN221 or permission of Instructor.	L+L 3.0 3.0 3.0
DAN229	Musical Theatre Dance III	Theory and practice of musical theatre dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN130 or permission of Instructor.	L+L 1.0 3.0 3.0

DAN230	Musical Theatre Dance IV	Theory and practice of musical theatre dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN229 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN231	Ballet III	Theory and practice of ballet at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN134 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN231AA	Ballet III: Intensive	Theory and intensive practice of ballet at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN134 or permission of Instructor.	L+L 2.0 5.0 5.0
DAN231PA	Ballet Intermediate Level	Dance training for personal skill development and interest. Theory and practice of ballet at the intermediate level.	Prerequisites: A grade of C or better in DAN134PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN232	Modern Dance III	Theory and practice of modern dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN135 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN232AA	Modern Dance III: Intensive	Theory and intensive practice of modern dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN135 or permission of Instructor.	L+L 2.0 5.0 5.0
DAN232PA	Modern Dance Intermediate Level	Dance training for personal skill development and interest. Theory and practice of modern dance at the intermediate level.	Prerequisites: A grade of C or better in DAN135PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN233	Jazz Dance III	Theory and practice of jazz dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN136 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN233AA	Jazz Dance III: Intensive	Theory and intensive practice of jazz dance at the beginning intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN136 or permission of Instructor.	L+L 2.0 5.0 5.0

DAN233PA	Jazz Intermediate Level	Dance training for personal skill development and interest. Introduction to the theory and practice of jazz dance at the intermediate level.	Prerequisites: A grade of C or better in DAN136PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN234	Ballet IV	Theory and practice of ballet at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN231 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN234AA	Ballet IV: Intensive	Theory and intensive practice of ballet at the advanced intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN231AA or permission of Instructor.	L+L 2.0 5.0 5.0
DAN234PA	Ballet Advanced Level	Dance training for personal skill development and interest. Theory and practice of ballet at the advanced level.	Prerequisites: A grade of C or better in DAN231PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN235	Modern Dance IV	Theory and practice of modern dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN232 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN235AA	Modern Dance IV: Intensive	Theory and intensive practice of modern dance at the advanced intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN232AA or permission of Instructor.	L+L 2.0 5.0 5.0
DAN235PA	Modern Dance Advanced Level	Dance training for personal development and interest. Theory and practice of modern dance at the advanced level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN232PA or permission of Department or Division.	L+L 0.5 1.5 1.5
DAN236	Jazz Dance IV	Theory and practice of jazz dance at the intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN233 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN236AA	Jazz Dance IV: Intensive	Theory and intensive practice of jazz dance at the advanced intermediate level. Development of movement quality and performance skills.	Prerequisites: A grade of C or better in DAN233AA or permission of Instructor.	L+L 2.0 5.0 5.0
DAN236PA	Jazz Advanced Level	Dance training for personal skill development and interest. Introduction to the theory and practice of jazz dance at the advanced level.	Prerequisites: A grade of C or better in DAN233PA or permission of Department or Division.	L+L 0.5 1.5 1.5

DAN237	Ballet Pointe I	An introduction to the theory and practice of pointe work at the beginning level. Development of strength and movement quality.	Prerequisites: A grade of C or better in DAN134 or permission of Instructor. Corequisites: DAN231 or DAN234.	L+L 1.0 1.0 1.0
DAN240	Tap Dance III	Theory and practice of tap dance at a beginning intermediate level.	Prerequisites: A grade of C or better in DAN145 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN245	Tap Dance IV	Theory and practice of tap dance at an intermediate level.	Prerequisites: A grade of C or better in DAN240 or permission of Instructor.	L+L 1.0 3.0 3.0
DAN250	Dance Performance III	Continued study of the process and practice of dance performance at beginning intermediate level.	Prerequisites: A grade of C or better in DAN155 or permission of Instructor. Corequisites: Any level of any of the following dance technique courses with a DAN prefix: ballet, modern, jazz, hip hop, tap, social, or world dance.	L+L 1.0 3.0 3.0
DAN255	Dance Performance IV	Continued study of the process and practice of dance performance at the intermediate level.	Prerequisites: A grade of C or better in DAN250 or permission of Instructor. Corequisites: Any level of any of the following dance technique courses with a DAN prefix: ballet, modern, jazz, hip hop, tap, social, or world dance.	L+L 1.0 3.0 3.0
DAN264	Choreography I	Study of basic dance choreography to include construction of a phrase, structure and form in a composition, and the basic elements of time, space and energy	Prerequisites: None.	L+L 3.0 3.0 3.0
DAN265	Choreography II	Exploration of choreography at the intermediate level. Experimentation with the various approaches to creative practice as established by 20th and 21st century artists.	Prerequisites: A grade of C or better in DAN264 or permission of Instructor.	L+L 3.0 3.0 3.0
DAN272	Dance Technology	Survey of the expanding field of technology as it pertains to the study and performance of dance.	Prerequisites: None.	L+L 3.0 3.0 3.0



DAN280	Dance Practicum	A culmination of coursework for the dance major requiring completion of an extended choreographic work from conception to performance. Also requires a final evaluative paper on the successes and challenges encountered throughout the project.	Prerequisites: Permission of Instructor.	L+L 2.0 3.0 3.0
DAN282AA	Service-Learning Experience in Dance	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
DAN282AB	Service-Learning Experience in Dance	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
DAN282AC	Service-Learning Experience in Dance	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
DAN290AA	Dance Conservatory I	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the beginning level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: None.	L+L 1.0 3.0 3.0
DAN290AB	Dance Conservatory I	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the beginning level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: None.	L+L 2.0 6.0 6.0

DAN290AC	Dance Conservatory I	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the beginning level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: None.	L+L 3.0 9.0 9.0
DAN291AA	Dance Conservatory II	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the intermediate level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: A grade of C or better in (DAN131and DAN132) or permission of Instructor.	L+L 1.0 3.0 3.0
DAN291AB	Dance Conservatory II	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the intermediate level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: A grade of C or better in (DAN131and DAN132) or permission of Instructor.	L+L 2.0 6.0 6.0
DAN291AC	Dance Conservatory II	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the intermediate level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: A grade of C or better in (DAN131and DAN132) or permission of Instructor.	L+L 3.0 9.0 9.0

DAN292AA	Dance Conservatory III	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the advanced level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: A grade of C or better in (DAN134 and DAN135) or permission of Instructor.	L+L 1.0 3.0 3.0
DAN292AB	Dance Conservatory III	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the advanced level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: A grade of C or better in (DAN134 and DAN135) or permission of Instructor.	L+L 2.0 6.0 6.0
DAN292AC	Dance Conservatory III	An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the advanced level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills.	Prerequisites: A grade of C or better in (DAN134 and DAN135) or permission of Instructor.	L+L 3.0 9.0 9.0
DAN293	Teaching Dance in Elementary Education	Introduction to theories and methods of teaching dance and movement in the elementary school setting. Includes planning, facilitating, and assessing dance and movement experiences for grades K-6.	Prerequisites: A grade of C or better in (BIO160, DAN231, DAN232, DAN233 and DAN264) or permission of Instructor.	LEC 3.0 3.0 3.0
DAN294	Teaching Dance In Secondary Education	Introduction to the theories and methods of teaching dance and movement in the elementary school setting. Includes planning, facilitating, and assessing dance and movement experiences for grades K-6.	Prerequisites: A grade of C or better in (BIO160, DAN231, DAN232, DAN233 and DAN264) or permission of Instructor.	LEC 3.0 3.0 3.0

DAN295	Teaching and Management of Studio Dance	Expands upon teaching/learning processes in the area of dance as relates to studio dance setting and exploration of management skills.	Prerequisites: A grade of C or better in (BIO160, DAN231, DAN232, DAN233 and DAN264) or permission of Instructor.	LEC 3.0 3.0 3.0
DAN298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
DAN298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
DAN298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

DFT100	Introduction to Drafting	Provides experience and explores career opportunities in three major areas of drafting: mechanical, electronics and construction. Provides basic skills including multiview and pictorial drawing and freehand sketching	Prerequisites: None.	L+L 3.0 6.0 6.0
DFT105AA	Computer Aided Drafting I: AutoCAD	Industrial use of AUTOCAD equipment (hardware and software) in the areas of mechanical, electronic and construction drawings	Prerequisites: None.	L+L 3.0 6.0 6.0
DFT106	Algebra and Graphs for Design Technology	Algebraic principles and applications used in the design trades. Additional topics in the use of rectangular coordinates.	Prerequisites: A grade of C or better in MAT092 or equivalent or 1 year of high school algebra or permission of Department or Division.	LEC 3.0 3.0 3.0
DFT107	Trigonometry and Analytic Geometry for Design Technology	An introduction to plane trigonometry and plane and solid geometry with practical applications to the field of design drafting. Problems in the analysis of force, stress, and vectors as well as primary geometric considerations	Prerequisites: A grade of C or better in DFT106 or equivalent.	LEC 3.0 3.0 3.0
DFT110	Introduction to Drafting	Fundamentals of drafting including lettering, basic drawing concepts, geometric construction and multiview projection.	Prerequisites: None.	L+L 3.0 6.0 6.0
DFT111	Intermediate Drafting	Dimensioning and tolerancing, sectional views and auxiliary views.	Prerequisites: A grade of C or better in DFT105AA, or DFT110, or equivalent.	L+L 3.0 6.0 6.0
DFT112	Advanced Drafting	Detail and assembly drawings, dimensioning and tolerancing per current manufacturing standards.	Prerequisites: A grade of C or better in (DFT111 and DFT254AA) or equivalent.	L+L 3.0 6.0 6.0
DFT114	Machine Trades Blueprint Reading	Analysis and interpretation of technical drawings, common to manufacturing and the machine trades	Prerequisites: None.	LEC 3.0 3.0 3.0

DFT115	Geometric Dimensioning and Tolerancing	Principles and application of the latest techniques in geometric dimensioning and tolerancing in accordance with current American Society of Mechanical Engineers (ASME) Y14.5M. Recommended for all manufacturing personnel who read or produce engineering drawings related to contracts with the U.S. Government.	Prerequisites: A grade of C or better in DFT110 or MET109 or Corequisites: DFT110 or MET109 or permission of Department or Division.	LEC 3.0 3.0 3.0
DFT121	Introduction To Architectural Drafting	Emphasis on basic drafting techniques and principles of architectural drafting. Use of basic drafting instruments. Includes lettering, line weights, dimensioning, multiview projection, floor plans, elevations, construction details, and portfolio development	Prerequisites: None.	L+L 3.0 6.0 6.0
DFT122	Residential Architectural Drafting	Principles of architectural design and residential construction. Development and use of schematics, sketches, elevations, plans, and details for designing residential structures using board and/or Computer Aided Drafting (CAD) skills.	Prerequisites: A grade of C or better in (DFT105AA and DFT121) or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0
DFT123	Commercial Architectural Drafting	Architectural drafting practices, principles of design, and preliminary planning as applied to commercial architecture. Development and use of schematics, sketches, elevations, plans, and details for designing commercial structures using board and/or CAD (Computer Aided Drafting) skills. Application of local building codes, and architectural graphic standards and specifications	Prerequisites: A grade of C or better in DFT122 or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0
DFT126	Building Trades Blueprint Reading	Analysis and interpretation of technical drawings common to the construction industry and building trades	Prerequisites: None.	LEC 3.0 3.0 3.0

DFT131	Civil Drafting I	Preparation of land plats, topographic maps, plans, profiles and sections used in land subdivision, construction, hydrology, structural geology, mining and civil engineering. Photogrammetry, cut and fill calculations, and relationship of field survey work to the engineering office.	Prerequisites: A grade of C or better in DFT121 or permission of Department or Division.	L+L 3.0 6.0 6.0
DFT221	Architectural Rendering: Pen and Ink, Technical Techniques	Two and three dimensional drawing with shades/shadows, landscape, hardscape, finishes, human figures, and architectural entourage in pencil and ink media	Prerequisites: A grade of C or better in DFT121 or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0
DFT223	Structural Steel Detailing	Study of the manufacture of structural steel and its application in the construction field. Includes study of plates, girders, roof trusses, latticed girders, and beams. Emphasis on drawing and detailing of erection plans and diagrams using board and/or CAD (Computer Aided Drafting) skills and techniques	Prerequisites: A grade of C or better in DFT122 or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0
DFT224	Landscape Architectural Drafting	Application of commercial design techniques to landscape architectural drafting. Selection of materials, awareness of problems, and emphasis on the production of site plan drawings using board and/or computer aided drafting (CAD) skills	Prerequisites: A grade of C or better in DFT122 or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0
DFT240	Cadence Virtuoso XL	Use of the Virtuoso XL Layout Editor to automate mask design, from component generation through automatic and interactive routing. Focuses on generating custom layouts from schematics or netlist and edit existing layouts that have defined connectivity.	Prerequisites: None.	L+L 3.0 6.0 6.0

DFT245AA	Integrated Circuit Design - CMOS IA	Entry level integrated circuit layout design in CMOS (Complimentary Metal Oxide Silicon) Technology. Use of drafting techniques for layout and drafting of logic diagrams, schematic diagrams, circuit planning, and integrated circuit drawings.	Prerequisites: A grade of C or better in (DFT105AA, DFT110, and ELE131) or equivalent or permission of Instructor.	L+L 3.0 6.0 6.0
DFT245AB	Integrated Circuit Design - CMOS IB	CMOS(Complimentary metal oxide silicon). Layout drawings of a complex nature, cell concepts and putting together major sub-assemblies of an integrated circuit. Other integrated circuit components such as resistors, capacitors, bonding pads	Prerequisites: A grade of C or better in DFT245AA.	L+L 3.0 6.0 6.0
DFT251	Computer Aided Drafting	Computerized drafting. Equipment and commands to draw lines, angles, arcs, circles and ellipses. Drafting problems including geometric, isometric and orthographic projections leading to production of printed circuit drawings, assembly drawings and construction drawings	Prerequisites: A grade of C or better in DFT110 or permission of Department or Division.	L+L 2.0 4.0 4.0
DFT254AA	Computer Aided Drafting II: AutoCAD	Advanced AutoCAD techniques in constructing three-dimensional objects and symbols, dimensioning and text; advanced techniques for projection, rotation, and translation of objects; advanced plotter use.	Prerequisites: A grade of C or better in DFT105AA or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0



DFT255	3D Printing/Additive Manufacturing	Rapidly advancing additive manufacturing (AM) technologies, often called 3D printing, provide us a direct way of converting digital data into physical objects. Additive manufacturing enables the building of customized parts previously impossible to fabricate. Design for additive manufacturing teaches background, terminology, fundamentals designing for additive manufacturing, and current AM technology as well as advantages and limitations of 3D printing, materials, and post-processing. Students will learn and apply technique through lab activities, machine operation and maintenance, part design and analysis, adapting stereolithography files, printing models, and post-processing.	Prerequisites: A grade of C or better in DFT254AA, or MFG254, or permission of Department or Division.	L+L 4.0 4.0 4.0
DFT257AD	Architectural CAD: Architectural Desktop	Emphasis on the architectural applications of computer aided drafting. Use of computer hardware and software to generate residential working drawings. Focus on floor and foundation plans, elevations, sections, details, schedules, and plotting	Prerequisites: A grade of C or better in DFT122 or equivalent or permission of Department or Division.	L+L 3.0 6.0 6.0
DFT262	3D Architectural Animation	Creation of 3D architectural animations. Includes sketches, storyboards, animation techniques, and portfolio development	Prerequisites: A grade of C or better in DFT122 or DFT254AA or permission of Department or Division.	L+L 3.0 6.0 6.0

DFT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
DFT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
DFT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

DFT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
DFT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
DFT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

DFT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
DHE110	Pharmacology	Study of the principles of pharmacology and drugs affecting oral health and dental treatment. Topics include drug interactions, oral manifestations, drugs used in dentistry and alternative medicine.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	LEC 3.0 3.0 3.0
DHE112	Oral Pathology	Identification, classification, etiology and treatment of lesions of the oral mucosa and atypical conditions of the oral cavity and supporting structures. Understanding of abnormal conditions to recognize the parameters of comprehensive dental hygiene care. Multimedia resources are used extensively for identification of oral lesions.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	LEC 3.0 3.0 3.0
DHE115	Emergency Medicine	Introduction to recording and interpreting medical history. Additional topics include: recognition of signs and symptoms of medical emergencies, procedures and techniques introduced to prevent emergencies and management of emergency situations in the dental environment.	Admission to the Dental Hygiene Program.	LEC 2.0 2.0 2.0
DHE117	Dental Radiography	Physics of radiography, theory of radiation production, exposure techniques, radiation protection, film processing, mounting, and interpretation of radiography. Course activities include multi-media resources.	Admission to the Dental Hygiene Program or permission of Instructor.	LEC 2.0 2.0 2.0

DHE119	Head and Neck Anatomy	Study of the structures of the head and neck relevant to dental hygiene. Topics include: osteology, musculature, vascular supply, lymph and glandular tissue, cranial nerves and routes of infection. Course activities include use of skulls, models and multimedia resources.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	LEC 3.0 3.0 3.0
DHE120	Pre-Clinical Dental Hygiene	Introduction to the dental hygiene profession and the process of care. Infection control, patient assessment, preventive treatment and dental hygiene instrumentation are practiced. Students are introduced to self assessment skills and quality improvement.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	L+L 6.0 12.0 12.0
DHE121	Dental Anatomy, Embryology and Histology	Includes the histology and embryology of oral tissues; developmental disturbances of the face, oral cavity, and related structures; tooth composition and morphology; eruption patterns and occlusal evaluation. Use of skulls, models and multi-media resources also covered.	Admission to the Dental Hygiene Program.	L+L 2.0 3.0 3.0
DHE125	Dental Radiography Laboratory	Radiation safety and infection control procedures for operator and patient. Film placement, exposure, development, mounting and evaluation of dental radiographs. Operation and maintenance of X-ray and processing equipment. Interpretation of radiographic findings.	Prerequisites: A grade of C or better in DHE117 or Corequisites: (DHE117 and admission to the Dental Hygiene Program) or permission of Instructor.	LAB 1.0 3.0 3.0
DHE127	Prevention of Dental Disease	Introduction to preventive aids, agents, and coaching to help patients achieve optimum oral health, reduce incidence of disease, and minimize risk of oral injury. Instills critical thinking in etiologic agents, cariology, fluorides, sealants, nutrition, and their oral and systemic implications.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	LEC 3.0 3.0 3.0

DHE132	Dental Hygiene Theory I	Study of the dental hygiene process of care with emphasis on assessment, planning and implementation. Topics include instrumentation, adjunct dental hygiene services, instrument sharpening, computer technology, dental specialties and professional accountability.	Prerequisites: A grade of C or better in (DHE120 and admission to the Dental Hygiene Program) or permission of Instructor. Corequisites: DHE133.	L+L 3.0 5.0 5.0
DHE133	Dental Hygiene Clinic I	Application of the dental hygiene process of care with emphasis on assessment, planning, and implementation. Introduction to evaluation of dental hygiene therapy.	Prerequisites: A grade of C or better in DHE120 and admission to the Dental Hygiene Program. Corequisites: DHE132 and current CPR card.	LAB 3.0 9.0 9.0
DHE201	Dental Materials	Composition, properties and criteria for use of dental materials. Principles of mixing techniques of restorative, preventative, and laboratory dental materials.	Prerequisites: Admission to the Dental Hygiene Program or permission of instructor. Corequisites: DHE202.	LEC 2.0 2.0 2.0
DHE202	Dental Materials Laboratory	Manipulate permanent and temporary restorative materials, impression material, dental waxes, cements, periodontal dressings, bases and liners. Fabricate mouth protectors and study models. Laboratory proficiency in margination of permanent restorative materials.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor. Corequisites: DHE201.	LAB 1.0 3.0 3.0
DHE212	Dental Hygiene Theory II	Study of the dental hygiene process of care with emphasis on comprehensive care planning, case presentation, and clinical decision making. Introduction to advanced periodontal instrumentation.	Prerequisites: A grade of C or better in DHE132 and DHE133 and admission to the Dental Hygiene Program. Corequisites: DHE213.	LEC 2.0 2.0 2.0
DHE213	Dental Hygiene Clinic II	Application of the dental hygiene process of care with emphasis on comprehensive care planning, case presentation, clinical decision making, advanced instrumentation and improved time utilization.	Prerequisites: A grade of C or better in DHE132 and DHE133 and admission to the Dental Hygiene Program. Corequisites: DHE212.	LAB 5.0 15.0 15.0

DHE219	Practice Management	Integration of practice management concepts and comprehensive quality patient care in preparation for future collaborative practice between dental hygienists and dentists. Students are challenged with practice situations including productivity, conflict management, ethical and legal issues.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	LEC 2.0 2.0 2.0
DHE225	Periodontics	Principles of periodontology; etiology, microbiology, pathogenesis, classification and characteristics of healthy and diseased periodontal tissues. Surgical treatment of periodontal disease and the effects of dental hygiene therapy, surgical techniques and maintenance therapy. Evaluation of the scientific literature and multi-media resources are used extensively.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	LEC 3.0 3.0 3.0
DHE227	Dental Anesthesia	A comprehensive lecture and laboratory course providing concepts and techniques for the administration of local anesthetic agents and nitrous oxide. Experience gained in medical history review, electronic recordkeeping, patient management, and hands-on experience administering local anesthetics and nitrous oxide in a clinical setting.	Prerequisites: A grade of C or better in DHE119.	LEC 2.0 2.0 2.0 0.0 3.0 3.0
DHE229	Community Oral Health	An examination of methods used to assess the oral health status of the community and to plan, implement, finance and evaluate dental public health programs. Focus on community-based health promotion and disease prevention measures to improve the oral health of the population, as well as the characteristics of dental care delivery systems and the social, political, psychological and economic factors affecting utilization within the system.	Prerequisites: Admission to the Dental Hygiene Program or permission of Instructor.	LEC 3.0 3.0 3.0

DHE232	Dental Hygiene Theory III	Study of the dental hygiene process of care with emphasis on the patient with special needs and advanced instrumentation. Students participate in field observations and present case documentations.	Prerequisites: A grade of C or better in (DHE212 and DHE213) and admission to the Dental Hygiene Program. Corequisites: DHE233.	L+L 2.0 3.0 3.0
DHE233	Dental Hygiene Clinic III	Application of the dental hygiene process of care with emphasis on diverse populations. Students prepare for clinical practice using self assessment, evaluation and critical thinking skills.	Prerequisites: A grade of C or better in (DHE212 and DHE213) and admission to the Dental Hygiene Program. Corequisites: DHE232.	LAB 5.0 15.0 15.0
DHE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
DHE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0



DHE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
DIE104	Electrical for Diesel Engines I	Introduces electrical principles and circuit theory through the operation, diagnostics and repair of batteries, starting and charging circuits. Concepts include magnetism, electrical circuits, DC electricity, electrical schematic reading, interpretation, and testing.	Prerequisites: None.	L+L 3.0 4.0 4.0
DIE106	Mobile Hydraulics and Pneumatics	The transmission of energy through hydraulic and pneumatic systems. Defines the function and operation of valves, cylinders, pumps, motors, accumulators, reservoirs, coolers, hoses, fluids, filters, seals and contamination control. Basic troubleshooting and schematic interpretation emphasized. Pneumatic functions discussed.	Prerequisites: None.	L+L 3.0 4.0 4.0
DIE108	Heavy Duty Diesel PowerTrains	Introduction to powertrain concepts and operation of basic components of the powertrain system. Basic powertrain maintenance industry practices and skills that include but not limited to pressure testing and adjustments. Clutch fill calibration and some component disassembly will be covered.	Prerequisites: None.	L+L 3.0 4.0 4.0

DIE112	General Diesel Engines	Introduction to diesel engine operation and related systems. Concepts include basic engine maintenance, engine tear-down, inspection, reassembly, and all necessary adjustments.	Prerequisites: None.	L+L 3.0 4.0 4.0
DIE296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
DIE296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

DIE296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
DIE296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
DIE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

DIE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
DIE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
DMI100	Introduction to Diagnostic Medical Radiography: Professionalism and Patient Care	Preparation for entry into the medical field, with specific focus for diagnostic medical imaging. Role of health care worker in diagnostic imaging. Job duties, responsibilities, working conditions and work environments in the inpatient and outpatient clinical settings. Theoretical and practical understanding of patient assessment and patient care. Medical ethics and the laws related to the healthcare worker in general and those in the diagnostic imaging environment.	Prerequisites: Admission to the Medical Radiography Program.	L+L 1.0 1.0 1.0

DMI101	Radiation Safety	Sources and types of radiation. Units of radiation measurement. Conversions from traditional to system international units. Protection devices, operating equipment (including ancillary devices), and federal and state laws regarding radiation safety. Radiation monitoring devices.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0
DMI102	Radiographic Positioning I	Terminology, procedures, and anatomy pertinent to radiography. Routine radiographic positioning of chest, upper limb, and lower limb. Special projections of the chest, upper and lower limbs. Evaluation of radiographs of the chest, upper and lower limb. The impact of pathology on positioning and radiographic quality.	Prerequisites: Admission to the Medical Radiography Program.	LEC 3.0 3.0 3.0
DMI102LL	Radiographic Positioning I Laboratory	Terminology, procedures, and anatomy pertinent to radiography. Routine radiographic positioning of chest, upper limb, and lower limb. Special projections of the chest, upper and lower limbs. Evaluation of radiographs of the chest, upper and lower limb.	Prerequisites: Admission to the Medical Radiography Program.	LAB 1.0 3.0 3.0
DMI103	Introduction to Imaging	Complete instruction overview on imaging receptors, image processing and imaging systems. Discussion of image processing procedure that renders physical and chemical changes as a visible radiographic image.	Prerequisites: Admission to the Medical Radiography Program.	L+L 1.5 2.5 2.5
DMI104	Radiography Practicum I	Observation of and familiarization with hospital procedures and environment. Demonstration of appropriate patient care. Process examination requisitions and other documentation related to the procedure. Image acquisition, processing and storage. Operation and maintenance of radiographic equipment. Performance of basic radiographic procedures to include the chest, upper and lower limb.	Prerequisites: Admission to the Medical Radiography Program.	LAB 3.5 21.0 0.0

DMI105	Fundamentals of Radiation Physics	Fundamental principles of the physics involved in medical radiography. Simplified math, physical concepts of energy, the structure of matter, static electricity, electric current, and electromagnetism. Generators and motors, high-voltage control, and circuitry of the x-ray tube. Principles and characteristics of x-ray production.	Prerequisites: Admission to the Medical Radiography Program or permission of Instructor.	LEC 3.0 3.0 3.0
DMI106	Radiographic Image Evaluation I	Systematic procedure for evaluating radiographic images to determine their diagnostic quality.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
DMI107	Principles of Digital Imaging	Content imparts an understanding of the components, principles, and operation of digital imaging systems found in diagnostic radiology. Establishes a knowledge base in factors that govern the image production process. Lab activities provide opportunities to apply course concepts and experiment with various digital imaging systems.	Prerequisites: Admission to the Medical Radiography Program.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
DMI108	Structured Diagnostic Medical Imaging Skills Enhancement	Structured diagnostic imaging cognitive learning and imaging study skills to help students achieve success in their respective imaging courses. Diagnostic medical imaging learning process and critical thinking application skills emphasized in coordination with the level of matriculation.	Prerequisites: None. Corequisites: Enrolled in Diagnostic Medical Imaging Program (Medical Radiography Nuclear Medicine Technology and Diagnostic Medical Ultrasound) or permission of Program Director.	LEC 1.0 1.0 1.0
DMI110	Critical Evaluation of the Diagnostic Medical Image	Recognition of acceptable and substandard diagnostic images according to established radiographic criteria. Production of diagnostic images of various regions of the body. Assessment and analysis of medical images to detect positioning and exposure errors. Correction of diagnostic image errors. Impact of pathology on image quality. Application of radiographic principles and problem solving skills of the digital image.	Prerequisites: Valid Arizona Medical Radiography Technology Board of Examiners (MRTBE) Practical Technologist license and a grade of C or better in [BIO160, ENG101, (CRE101 or CRE111), (COM101 or COM110) and HCC146.]	L+L 1.5 2.5 2.5

DMI112	Radiographic Positioning II	Radiographic anatomy of the upper and lower limb, pelvis and bones of the thorax. Positioning of the humerus, shoulder, pelvis, hip, and bones of the thorax. Radiographic anatomy of the vertebral column and cranium. Positioning of the vertebral column and cranium. Emphasis on radiation protection, image evaluation and modifications. Serving the culturally diverse patient.	Prerequisites: Admission to the Medical Radiography Program.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
DMI113	Orientation to the Clinical Environment	Observation and familiarization with facility procedures, department specific procedures and protocols and the overall environment. Demonstration of appropriate patient care skills. Familiarization with facility Hospital Information System (HIS) and Radiology Information System (RIS), other specialized computer programs, i.e., Picture Archiving and Communication System (PACS), examination requisitions and other documentation related to procedures performed.	Prerequisites: Permission of Program Director.	LAB 1.0 6.0 0.0
DMI114	Radiography Practicum II	Reinforcement and broadening of routine acquired in earlier practicum. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills. Performance of skeletal and contrast media radiographic procedures.	Prerequisites: Admission to the Medical Radiography Program.	LAB 3.0 18.0 0.0
DMI118	Contrast Media Procedures	Terminology, gross and radiographic anatomy, procedures and image evaluation related to contrast media procedures. Type, nomenclature, administration, and adverse reactions and pharmacology related to contrast media. Preparation and dosages. Select topics related to surgical radiography. Unique positioning situations.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.5 2.5 2.5

DMI124	Radiography Practicum III	Reinforcement and broadening of routine and contrast media procedures, and portable skills acquired in earlier practicum with direct or indirect supervision as appropriate. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills.	Prerequisites: Admission to the Medical Radiography Program.	LAB 3.0 18.6 0.0
DMI204	Radiography Practicum IV	Supervised student performance of routine radiological procedures, including surgery and portable procedures.	Prerequisites: Admission to the Medical Radiography Program.	LAB 3.0 18.0 0.0
DMI211	Pharmacology of Contrast Agents	Common drug nomenclature and pharmacology of contrast agents. Correct preparation, dosages, and administration of contrast agents. Chemical characteristics and properties of contrast agents. Adverse reactions, patient care issues, and medical/legal issues	Currently enrolled in medical radiography program or graduate radiologic technologist or permission of Instructor.	LEC 0.5 0.5 0.5
DMI212	Advanced Radiographic Procedures	Physical space imaging equipment and sterile environment required for advanced and interventional radiographic procedures. Types and applications for needles, guide wires, and catheters. Advanced and interventional radiographic procedures.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
DMI214	Radiography Practicum V	Reinforcement and broadening of routine procedures, portable skills and surgical procedures acquired in earlier practicum. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills. Performance of advanced radiographic procedures.	Prerequisites: Admission to the Medical Radiography Program.	LAB 4.5 28.8 0.0



DMI215	Radiation Biology	Provide an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole. Factors affecting biological response including acute and chronic effects of radiation. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0
DMI216	Radiographic Image Evaluation II	Systematic procedure for evaluating radiographic images to determine their diagnostic quality.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
DMI220	Sectional Anatomy	Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity.	Prerequisites: (BIO160 or BIO201) and (HCC145 or HCC146), or a graduate of a related medical program of study or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography OR Admission to the Medical Radiography Program or permission of Instructor.	LEC 3.0 3.0 3.0
DMI221	Advanced Digital Imaging	Equipment used in digital imaging, including image intensification, calculation of minification, brightness gain, viewing, and storage systems. Components and operating principles related to digital fluoroscopy. Principles, physics, and instrumentation related to digital radiography.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.5 2.0 2.0 LAB 0.0 1.5 1.5

DMI222	Advanced Radiologic Pathology	Application of terminology related to the disease process and the general principles of disease. Standard precautions - disease control measures to include education, asepsis, isolation, and communicability. Radiographic appearances of specific forms of pathology. Symptoms, prognosis, and diagnosis of specific forms of pathology.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
DMI223	Introduction to Computed Tomography	Overview of the principles and operation of computed tomography (CT) scanner. Content includes history, physics processes, instrumentation components, imaging acquisition, reconstruction and display for computed tomography imaging.	Prerequisites: Admission to the Medical Radiography Program or permission of Instructor.	LEC 1.0 1.0 1.0
DMI224	Radiography Practicum VI	Reinforcement and broadening of all radiographic procedures, portable skills and surgical procedures performed in the clinical environment acquired in earlier practicum. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills.	Prerequisites: Admission to the Medical Radiography Program.	LAB 5.0 30.6 0.0
DMI225	Quality Improvement	Components, tests, and procedures for evaluation of radiographic systems to assure consistency in the production of quality images. State and federal regulations.	Prerequisites: A grade of C or better in DMI103, DMI105 and DMI107 or permission of Instructor.	LEC 1.0 1.0 1.0
DMI226	Radiographic Image Evaluation III	Systematic procedure for evaluating radiographic images to determine their diagnostic quality.	Prerequisites: A grade of C or better in DMI216.	LEC 1.0 1.0 1.0
DMI227	Radiography Seminar	Use of skills and resources for reviewing content areas examined by the American Registry of Radiologic Technologists (ARRT). Professional job-seeking procedures and development of resume.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0

DMI228	Radiography Practicum VII	Advanced imaging procedures.	Permission of Instructor and acceptance by sponsoring clinical institution.	L+L 1.0 6.0 0.0
DMS100	Introduction to Diagnostic Medical Sonography	Role of health care worker in diagnostic medical sonography. Job duties, responsibilities, working conditions and work environments in the inpatient and outpatient clinical settings. Overview of diagnostic and therapeutic procedures. Shadowing experience in diagnostic sonography department.	Prerequisites: None.	LEC 0.5 0.5 0.5
DMS101	Patient Care in Diagnostic Sonography	Safety procedures for the hospitalized patient. Transfer, moving and positioning techniques. Patent assessment methods and procedures. Protection of drains, tubes, intravenous lines, and infusion pumps. Gloving, gowning, and sterile procedures. Safe use and application of sonography equipment. Professional behavior and responsibility of the sonographer in the diagnostic imaging lab.	Prerequisites: Admission to the Diagnostic Medical Sonography program or permission of Instructor.	LAB 1.0 3.0 3.0
DMS110	Introduction to Diagnostic Sonography	Use of ultrasound including medical applications. Job description including opportunities, licensure, use of sonography equipment, responsibilities of diagnostic medical sonographers in the workplace, and medical ethics.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 3.0 3.0 3.0
DMS110LL	Introduction to Diagnostic Sonography Laboratory,	Use and maintenance of sonography equipment, and responsibilities of Diagnostic Medical Sonographers in the workplace.	Prerequisites: A grade of C or better in DMS110 or Corequisites: DMS110.	LAB 1.0 3.0 3.0
DMS120	Ultrasound Imaging: Abdominal Procedures I	Ultrasound evaluation of upper abdominal organs. Normal and pathologic ultrasound appearances of the liver, gallbladder, pancreas, biliary tree, spleen, adrenal glands, kidneys, major vascular structures, and lymph nodes.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 4.0 4.0 4.0

DMS120LL	Ultrasound Imaging: Abdominal Procedures I Laboratory	Ultrasound evaluation of upper abdominal organs. Normal ultrasound appearances of the liver, gallbladder, pancreas, biliary tree, spleen, adrenal glands, kidneys, major vascular structures, small parts, and lymph nodes.	Prerequisites: A grade of C or better in DMS120 or Corequisites: DMS120.	LAB 1.0 3.0 3.0
DMS121	Ultrasound Imaging: Abdominal Procedures II	Ultrasound evaluation of upper abdominal organs. Normal and pathologic ultrasound appearances of the liver, gallbladder, pancreas, biliary tree, spleen, adrenal glands, kidneys, major vascular structures, lymph nodes, and small parts.	Admission to Diagnostic Medical Sonography program.	LEC 3.0 3.0 3.0
DMS130	Ultrasound Imaging: OB/GYN Procedures	Ultrasound evaluation of the female pelvis, reproductive system, and fetus. Diagnostic tests related to the ultrasound procedure. Normal and pathologic ultrasound appearances of the fetus, placenta, uterus, cervix, fallopian tubes, and ovaries.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 3.0 3.0 3.0
DMS140	Ultrasound Case Studies: Part I	Medical terminology, anatomy, physical principles, and techniques for determining proper technical factors. Anatomical variants, normal, and pathological sonographic findings in diagnostic ultrasound case presentations.	Admission to Diagnostic Medical Sonography program.	LEC 2.0 2.0 2.0
DMS145	Clinical Pathology for Diagnostic Imaging	Disease etiology and impact on the human body. Physiologic effects of disease on body systems. Role of Diagnostic Medical Imaging (DMI) modalities in the diagnosis and treatment of selected disease processes. DMI as part of the health care team. Cultural implications in the prevention and treatment of disease.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 1.0 1.0 1.0
DMS148	Introduction to Musculoskeletal Sonographic Imaging	Ultrasound terminology. Ethics. Tissue structure and physiology in imaging. Legal ramifications. Documentation and reporting. Billing and coding. Professional standards. Roles healthcare clinicians and relationships to Sonography.	Prerequisites: Admission to Diagnostic Medical Sonography program or permission of the Program Director.	LEC 1.0 1.0 1.0

DMS150	Sonographic Principles and Instrumentation I	Sonographic principles and instrumentation necessary for the performance of diagnostic sonographic imaging and vascular examinations. Quality control materials and procedures. Biological effects of ultrasound energy.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 3.0 3.0 3.0
DMS150LL	Sonographic Principles and Instrumentation Laboratory	Laboratory experience in support of DMS150.	Prerequisites: A grade of C or better in DMS150 or Corequisites: DMS150.	LAB 1.0 3.0 3.0
DMS151	Sonographic Principles and Instrumentation II	Sonographic principles and instrumentation necessary for the performance of diagnostic sonographic examinations using Hemodynamics and Doppler imaging. Identifying and reducing image artifacts. Quality control materials and procedures. Biological effects of ultrasound energy.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 2.0 2.0 2.0
DMS155	Introduction to Clinical Care for Sonography	Observation of correct hospital policies and procedures in clinical simulation. The job description, duties, and functions of the sonographer. Career opportunities in ultrasound.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 1.0 5.0 0.0
DMS161	Clinical Practicum II-AA	Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Observation, assistance, and performance of, clerical, patient care, and sonographic duties under strict supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 1.0 5.0 0.0
DMS162	Clinical Practicum II-AB	Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Continued observation, assistance and performance of clerical, patient care and sonographic duties under strict supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0

DMS163	Clinical Practicum II-AC	Continued development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Ongoing observation, assistance, and performance of clerical, patient care, and sonographic duties under strict supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 3.0 15.0 0.0
DMS171	Clinical Practicum III-AA	Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced beginner level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sonographic duties under moderate supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0
DMS172	Clinical Practicum III-AB	Continued technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced beginner level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continued observation, assistance and performance of patient care and sonographic duties under moderate supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0
DMS210	Concepts of Vascular Imaging	Vascular physics and terminology. Application of imaging concepts to arterial, venous, and cerebrovascular ultrasound. Normal, abnormal and pathologic states of human vascular anatomy. Review and demonstration of selected scanning protocols to include extremity and cerebral vascular systems.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 2.0 2.0 2.0

DMS210LL	Concepts of Vascular Imaging Laboratory	Application of diagnostic concepts to arterial, venous, and cerebrovascular vasculature. Normal human vascular anatomy. Demonstration of selected scanning protocols to include extremity and visceral vascular systems.	Prerequisites: A grade of C or better in DMS210 or Corequisites: DMS210.	LAB 1.0 3.0 3.0
DMS220	Sectional Anatomy	Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity.	Prerequisites: (BIO160 or BIO201) and (HCC145 or HCC146), or a graduate of a related medical program of study or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography OR Admission to the Medical Radiography Program or permission of Instructor.	LEC 3.0 3.0 3.0
DMS225	High Risk Obstetric/Gynecology Sonography	Sonographic overview of the female reproductive system. High risk intervention and tests related to sonography. Normal and abnormal sonographic presentations of the uterus and fetus in pregnancy.	Admission to Diagnostic Medical Sonography program.	LEC 1.0 1.0 1.0
DMS230	Introduction to Echocardiography	Anatomy and physiology of the heart. Normal, abnormal and pathologic states of cardiac anatomy as it relates to diagnostic sonography. Demonstration of scanning techniques in echocardiography.	Admission to Diagnostic Medical Sonography program.	LEC 1.0 1.0 1.0
DMS235	Ultrasound Breast Imaging	Ultrasound imaging of the breast. Includes terminology, technique, physics and instrumentation. Breast anatomy, physical examination and procedure findings. Pathology and correlation with other imaging modalities.	Admission to Diagnostic Medical Sonography program.	LEC 1.0 1.0 1.0
DMS240	Ultrasound Case Studies: Part II	Medical terminology, anatomy, physical principles, and technology for determining proper technical factors. Anatomical variants, normal, and pathological sonographic findings in diagnostic ultrasound case presentations.	Admission to Diagnostic Medical Sonography program.	LEC 2.0 2.0 2.0

DMS241	Ultrasound Case Studies: Part III	Medical terminology, anatomy, physical principles, and technology for determining proper technical factors. Anatomical variants, normal, and pathological sonographic findings in diagnostic ultrasound case presentations.	Admission to Diagnostic Medical Sonography program.	LEC 2.0 2.0 2.0
DMS245	Neurosonography	Neuroanatomy and neurosonography of the brain and spinal cord.	Admission to Diagnostic Medical Sonography program.	LEC 1.0 1.0 1.0
DMS250	Musculoskeletal Sonography and Small Parts	Normal sonographic human anatomy in sagittal, transverse, oblique, coronal planes. Emphasis on musculoskeletal imaging, and small parts.	Prerequisites: Admission to Diagnostic Medical Sonography program.	L+L 2.0 2.0 2.0
DMS252	Musculoskeletal Procedures I	Ultrasound terminology and physics. Anatomical variants, normal, and pathological sonographic findings in musculoskeletal diagnostic ultrasound of the upper extremity.	Prerequisites: Admission to Diagnostic Medical Sonography program or permission of the Program Director.	L+L 4.0 6.0 6.0
DMS254	Musculoskeletal Procedures II	Ultrasound terminology and physics. Anatomical variants, normal, and pathological sonographic findings in musculoskeletal diagnostic ultrasound of the lower extremity.	Prerequisites: Admission to Diagnostic Medical Sonography program or permission of the Program Director.	L+L 4.0 6.0 6.0
DMS255	Pediatric Sonography	Ultrasound imaging of the pediatric population. Includes terminology, technique, physics and instrumentation. Embryology, anatomy, physical examination and procedure findings. Pathology and correlation with other imaging modalities.	Prerequisites: Admission to Diagnostic Medical Sonography Program, or Registered Diagnostic Medical Sonographer (RDMS) credentialed with permission from Program Director.	LEC 3.0 3.0 3.0
DMS261	Clinical Practicum IV-AA	Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the intermediate level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sonographic duties under limited supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0



DMS262	Clinical Practicum IV-AB	Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the intermediate level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continued observation, assistance and performance of patient care and sonographic duties under limited supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 3.0 15.0 0.0
DMS263	Vascular Clinical Practicum I	Technical and professional aspects of diagnostic vascular ultrasound in a hospital or clinical setting at the intermediate level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and vascular sonographic duties under limited supervision.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0
DMS265	Musculoskeletal Clinical Practicum	Musculoskeletal Clinical Practicum of 240 hours in healthcare setting Ultrasound imaging instrumentation, protocol implementation and positioning techniques. Application of Ultrasound safety, quality control procedures and effective patient care and communication skills.	Prerequisites: Admission to Diagnostic Medical Sonography program or permission of the Program Director.	LAB 4.0 24.0 0.0
DMS267	Musculoskeletal Case Studies	Medical terminology, anatomy, physical principles, and technology for determining proper technical factors. Anatomical variants, normal, and pathological sonographic findings in musculoskeletal diagnostic ultrasound case presentations.	Prerequisites: Admission to Diagnostic Medical Sonography program or permission of the Program Director.	LEC 1.0 1.0 1.0
DMS270	Clinical Practicum V-AA	Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced level. Clinical diagnostic experiences in routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 1.0 5.0 0.0

DMS271	Clinical Practicum V-AB	Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced level. Continued opportunity for clinical diagnostic experiences in routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning. Focus on progression to independent level of function.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0
DMS272	Clinical Practicum V-AC	Culminating clinical practice course with application of theoretical and practical concepts related to diagnostic ultrasound. Emphasis on independent performance of all clinical diagnostic procedures including routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0
DMS273	Vascular Clinical Practicum II	Development of technical and professional aspects of diagnostic vascular ultrasound in a hospital or clinical setting at the advanced level. Continued opportunity for clinical diagnostic experiences in routine/complex vascular scanning. Focus on progression to independent level of function.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LAB 2.0 10.0 0.0
DMS281	Ultrasound Registry Preparation Seminar: Physics and Instrumentation	Intensive review of major content measured in the American Registry for Diagnostic Medical Sonography certification examination. Physics and instrumentation in ultrasound technology.	Prerequisites: None.	LEC 1.0 1.0 1.0
DMS282	Ultrasound Registry Preparation Seminar: Abdominal and Small Parts Imaging	Intensive review of major content measured in the American Registry for Diagnostic Medical Sonography certification examination. Specialities of abdominal and small parts imaging.	Prerequisites: None.	LEC 1.0 1.0 1.0

DMS283	Ultrasound Registry Preparation Seminar: Obstetrics and Gynecology	Intensive review of major content measured in the American Registry for Diagnostic Medical Sonography certification examination for obstetrics and gynecology.	Prerequisites: None.	LEC 1.0 1.0 1.0
DMS284	Ultrasound Registry Preparation: Vascular Imaging	Anatomy and physiology of the vascular system. Testing parameters and methods for vascular examinations. Scan protocol for sonographic evaluation of head and neck, extremities, upper abdomen and pelvis vasculature. Interpret scans and special cases.	Prerequisites: None.	LEC 1.0 1.0 1.0
DMS285	Intermediate Vascular Technology	Sonographic evaluation of the upper and lower peripheral vascular system and the cerebrovascular system. Normal and pathologic sonographic imaging and Doppler evaluation of the venous, arterial systems of the upper and lower extremities, and intra and extracranial vessels.	Admission to Diagnostic Medical Sonography program.	LEC 2.0 2.0 2.0
DMS286	Advanced Vascular Technology	Vascular evaluation of the abdominal viscera and small parts. Normal and pathologic sonographic imaging and Doppler evaluation of the venous and arterial systems of the abdominal organs and small body parts. Capabilities, limitations, protocols and techniques required for diagnosis of the systemic, hepatoportal, and collateral systems, and extremities. Preoperative mapping of the radial, mammary, and epigastric arteries.	Prerequisites: Admission to Diagnostic Medical Sonography program.	LEC 2.0 2.0 2.0
DMS286LL	Advanced Vascular Technology Laboratory	Laboratory experience in support of DMS286.	Prerequisites: A grade of C or better in DMS286 or Corequisites: DMS286.	LAB 1.0 3.0 3.0

DMS290	Advanced Medical Ultrasound Procedures	Presentation of advanced topics in sonography including state of the art equipment. Superficial organs, heart and vessels, neurosonography, musculoskeletal, intraoperative, and interventional procedures. Aseptic technique, medical-legal and patient record keeping and image acquisition for performance of advanced sonographic examinations.	Admission to Diagnostic Medical Sonography program.	LEC 4.0 4.0 4.0
DMS295	Stress Echocardiography	Anatomy and physiology of the heart. Normal and stressed states of cardiac anatomy as it relates to diagnostic sonography. Performance of stress echocardiography exam. Pharmacological agents used in stress echocardiography.	Prerequisites: Completion of echocardiography program, or Registered Diagnostic Cardiac Sonographer (RDMS), or Registered Diagnostic Medical Sonographer (RDMS), or Registered Cardiac Sonographer (RCS) credentials.	L+L 2.0 3.5 3.5
ECE101	Origins of Science and Engineering	Introduction to the profession of engineering from a historical perspective. Evolution of engineering from its ancient roots in China, Europe and the Mideast to the development of engineering during the Renaissance and the 18th and 19th centuries in Europe and the growth of engineering in the United States from its French and British roots to current day practices	Prerequisites: None.	LEC 3.0 3.0 3.0
ECE102	Engineering Analysis Tools and Techniques	Learning culture of engineering, engineering use of computer tools, and computer modeling as applied to engineering analysis and design.	A grade of C or better is required in all Prerequisites. Prerequisites or Corequisites: MAT182 or higher level mathematics course or permission of Instructor or Department or Division Chair.	L+L 2.0 4.0 4.0
ECE102AA	Engineering Analysis Tools and Techniques	Learning culture of engineering, engineering use of computer tools, and computer modeling as applied to engineering analysis and design.	Prerequisites: Two years of high school algebra or a grade of C or better in MAT122 or departmental approval. Corequisites: MAT151 or MAT182 or MAT187.	LEC 2.0 2.0 2.0 LAB 0.0 2.0 2.0

ECE103	Engineering Problem Solving and Design	Fundamentals of the design process: engineering modeling, communication and problem-solving skills in a team environment. Emphasis on process-based improvements to the design process. Introduction to engineering as a profession.	Prerequisites: A grade of C or better in ECE102 or permission of Instructor.	L+L 2.0 4.0 4.0
ECE103AB	Engineering Problem Solving and Design	Fundamentals of the design process: engineering modeling, communication and problem-solving skills in a team environment. Emphasis on process-based improvements to the design process. Introduction to engineering as a profession.	Prerequisites: A grade of C or better in (ECE102 or ECE102AA) and (high school physics or PHY111 or PHY111AA).	LEC 2.0 2.0 2.0 LAB 0.0 2.0 2.0
ECE103EP	Engineering Problem Solving and Design (with EPICS projects)	Fundamentals of the design process: engineering modeling, communication and problem-solving skills in a team environment. Emphasis on process-based improvements to the design process. Introduction to engineering as a profession.	Prerequisites: A grade of C or better in ECE102 or permission of Instructor.	L+L 2.0 4.0 4.0
ECE104	EPICS Gold I	EPICS Gold is the first of a sequence of two two-credit service learning courses in which EPICS teams are formed from students potentially representing all engineering, computer science, and construction disciplines, as well as other majors, including sustainability, business, liberal arts, sciences, and others.	Prerequisites: None.	L+L 2.0 2.0 2.0
ECE105	MATLAB Programming	Use MATLAB to solve engineering problems. An overview of programming, including matrices, structures, strings, functions, control flow, file management, data analysis, graphing capabilities, and mathematical calculations.	Prerequisites: A grade of C or better in [(MAT150 or MAT151 or MAT152 or MAT155 or MAT156) and MAT182] or MAT187 or higher level mathematics course or permission of Instructor or Division or Department Chair.	L+L 1.0 2.0 2.0
ECE106	Survey of Nanotechnology	Reading and discussion on topics in nanotechnology. Includes key issues in the development of nanoscale engineering	Prerequisites: None.	LEC 1.0 1.0 1.0

ECE111	Bioengineering Systems	Introduction to biological concepts and application of engineering to biological and earth systems. Analysis of materials, structures, fluid mechanics, bioelectricity, and dynamics as applied to biological and environmental systems	Prerequisites: None.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 2.0
ECE201	Introduction to Engineering Statics	Introduction to engineering statics, including force systems, resultants, equilibrium of particles and rigid bodies, introduction to centroids and centers of mass, area moments of inertia, distributed loading, and friction.	Prerequisites: A grade of C or better in (ECE103 or ECE103AB or ECE103EP) and (MAT230 or MAT231) and (PHY115 or PHY121).	LEC 2.0 2.0 2.0 LAB 0.0 1.0 1.0
ECE202	Introduction to Engineering Dynamics	Introduction to engineering dynamics, including kinematics and kinetics of particles, mass moments of inertia, introduction to kinematics and kinetics of rigid bodies, introduction to energy and momentum principles for rigid bodies.	Prerequisites: A grade of C or better in ECE201. Corequisites: MAT240 or MAT241.	LEC 2.0 2.0 2.0 LAB 0.0 1.0 1.0
ECE203	Applications of Engineering Mechanics	Applications of engineering mechanics, including structural analysis, centroids and center of mass of complex objects, area and mass moments of inertia of complex objects, kinematics of rigid bodies and interconnected rigid bodies, and kinetics of rigid bodies and interconnected rigid bodies.	Prerequisites: A grade of C or better in ECE202. Corequisites: MAT240 or MAT241.	LEC 2.0 2.0 2.0 LAB 0.0 1.0 1.0
ECE211	Engineering Mechanics-Statics	Mathematical treatment of the basic physical principles of statics. Methods of vector algebra and vector calculus.	Prerequisites: A grade of C or better in PHY115 or PHY121 or permission of Instructor. Corequisites: MAT230 or MAT231.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 2.0
ECE212	Engineering Mechanics - Dynamics	Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.	A grade of C or better required in all Prerequisites. Prerequisites: ECE211, and (PHY115 or PHY121). Prerequisites or Corequisites: MAT240 or MAT241.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 2.0

ECE214	Engineering Mechanics	Foundations of engineering mechanics, including force systems, resultants, equilibrium of particles and rigid bodies, centroids and centers of mass, area and mass moments of inertia, friction, internal forces in structures, kinematics and kinetics of particles, kinematics and kinetics of rigid bodies, energy and momentum principles.	Prerequisites: A grade of C or better in (ECE103 or ECE103AB or ECE103EP) and (MAT230 or MAT231) and (PHY115 or PHY121). Corequisites: MAT240 or MAT241.	LEC 4.0 4.0 4.0 LAB 0.0 2.0 2.0
ECE215	Mechanics of Materials	Designed to provide students with a strong fundamental foundation in the mechanics of solids. Includes the concepts of stress and strain applied to the analysis and design of members subjected to axial and torsional loads and members subjected to shear and bending, applications and transformation of plane stress and plane strain, deformation of beams, and elastic buckling of columns.	Prerequisites: A grade of C or better in (ECE211 or ECE214).	L+L 3.0 5.0 5.0
ECE216	Computer-Aided Engineering	Introduction to engineering graphics, including tolerancing and fasteners, as well as creation and use of engineering drawings.	Prerequisites: A grade of C or better in ECE103, or ECE103EP, or permission of Instructor. Corequisites: ECE216LL.	LEC 2.0 2.0 2.0
ECE216LL	Computer-Aided Engineering Laboratory	Laboratory experience in support of ECE216.	Prerequisites: A grade of C or better in ECE103, or ECE103EP, or permission of Instructor. Corequisites: ECE216.	LAB 1.0 2.0 2.0
ECE230	Introduction to the Chemical Engineering Process	Introduces fundamental skills and principles needed to analyze the industrial processes of importance to the chemical engineering profession.	Prerequisites: A grade of C or better in CHM152 and MAT231.	L+L 3.0 5.0 5.0
ECE231	Introduction to Fluid Transport Phenomena	Fundamental skills and principles of fluid transport on both macroscopic and microscopic scales using mass balances, momentum balances and energy balances to analyze and/or design fluid systems of interest in the chemical engineering profession.	Prerequisites: A grade of C or better in MAT271 and PHY121.	L+L 3.0 5.0 5.0

ECE282AA	Volunteerism for Engineering Science: A Service Learning Experience	Service-learning field experience within human service organizations, government offices, public schools, or hospitals.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
ECE282AB	Volunteerism for Engineering Science: A Service Learning Experience	Service-learning field experience within human service organizations, government offices, public schools, or hospitals.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
ECE282AC	Volunteerism for Engineering Science: A Service Learning Experience	Service-learning field experience within human service organizations, government offices, public schools, or hospitals.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
ECE285	Introduction to Astrodynamics	Introduction to celestial mechanics and the dynamics of spacecraft navigation. Introduction to rocket propulsion and spacecraft design. Orbital and interplanetary celestial mechanics and maneuvers. Astrophysics and characteristics of the space environment. Lab is project-based, utilizing a real-time spacecraft simulation environment.	Prerequisites: A grade of C or better in ENG101 and (PHY115 or PHY121).	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
ECE294	Special Topics in Engineering	Exploration and investigation of a focused topic in engineering.	Permission of Instructor, or Department or Division Chair.	L+L 3.0 3.0 3.0
ECE294AA	Special Topics in Engineering	Exploration and investigation of a focused topic in engineering.	Permission of Instructor, or Department or Division Chair.	L+L 2.0 2.0 2.0
ECE294AB	Special Topics in Engineering	Exploration and investigation of a focused topic in engineering.	Permission of Instructor, or Department or Division Chair.	L+L 1.0 1.0 1.0
ECE294AC	Special Topics in Engineering	Exploration and investigation of a focused topic in engineering.	Permission of Instructor, or Department or Division Chair.	L+L 0.5 0.5 0.5
ECE296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0



ECE296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
ECE296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
ECE296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

ECE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Instructor, or Department or Division Chair.	LAB 1.0 1.0 0.0
ECE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Instructor, or Department or Division Chair.	LAB 2.0 2.0 0.0
ECE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Instructor, or Department or Division Chair.	L+L 3.0 3.0 0.0

ECG100	Introduction to Healthcare: Medical, Legal, Ethics	<p>This course is designed to offer the student a foundation in allied health career skills. Students will demonstrate knowledge of the healthcare delivery system, health occupations, basic infection control procedures, Health Insurance Portability and Accountability Act (HIPAA) guidelines, and the general laws and ethical responsibilities of healthcare workers. Students will learn to handle emergency situations, practice safety and security procedures, build interpersonal communication skills as well as define the roles and responsibilities of an electrocardiogram (ECG) technician. Students will learn medical terminology used in healthcare, with special care populations and in special services. Body systems approach to terms related to structures, functions, diseases, procedures and diagnostic tests. Building and analyzing terms using word parts. Medical abbreviations and symbols and term spelling.</p>	Prerequisites: None.	24
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ECG101	The Cardiovascular System: Anatomy & Physiology and Pathophysiology of Cardiovascular Disease	In this course, students will explore the structure and functions of the cardiovascular system. This course covers the anatomical structures of the heart, the composition of blood, the path of the blood through the heart, and the electrical conduction system. Students will learn how these systems act as one to supply vital oxygen, nutrients and hormones to tissues and remove carbon dioxide and metabolic waste products. This course also covers pathophysiologic concepts and interventions for patients with heart and coronary vessel disease and disorders such as coronary artery disease (CAD), angina pectoris, myocardial infarction (MI), congestive heart failure (CHF), dysrhythmias, inflammatory processes and valvular heart disease.	Prerequisites: ECG100.	32
ECG102	Introduction to ECG	Students will learn the fundamentals of electrocardiography. Students will be able to describe the electrophysiologic basis of cardiac arrhythmias, illustrate the electrical conduction system through the heart, and the process of recording an electrocardiogram (ECG). Students will learn how to acquire 3-lead ECG, 4-lead ECG, 12-lead ECG and interpret rhythm strips.	Prerequisites: ECG101.	24
ECG103	Applied ECG: Atrial, Junctional, Ventricular Rhythms and Heart Blocks	Students will learn to recognize arrhythmias that originate within the atria, the ventricle, the AV junction, AV node as well as heart blocks. Students will identify the specific features of each arrhythmia, where it originates from and diseases associated with each.	Prerequisites: ECG102.	24

ECG104	Advanced Cardiac Life Support	<p>Designed for the allied healthcare provider who initiates, directs, or participates in the management of cardiopulmonary arrest and other cardiovascular emergencies. Provides the allied healthcare provider with the knowledge and skills to recognize and manage cardiopulmonary arrest, acute arrhythmia, stroke, and acute coronary syndromes (ACS) according to current advanced emergency cardiovascular care (ECC) guidelines. Requires prior knowledge of basic electrocardiograph rhythm interpretation, pharmacologic agents, and other interventions used in advanced cardiac life support (ACLS). Upon completion of this course, students will be eligible to take the American Heart Association's (AHA's) Basic Life Support (BLS) and ACLS certification examinations.</p>	Prerequisites: ECG103.	16
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ECG105	Advanced ECG: Diagnostic Procedures, Certification Prep and Exam	<p>In this course, students will learn the skills and knowledge to perform patient assessments, obtain vital signs, start IVs and conduct blood draws. Students will learn how to attach a Holter monitor to produce a diagnostic trace and analyze the trace following the monitoring process. Students will also learn how to conduct clinical exercise stress tests utilizing exercise electrocardiography for patients with known or suspected coronary artery disease. In this course, students will also learn how to conduct telemetry monitoring while in a hospital setting and assess and evaluate pacemakers. Diagnostic testing procedures will be performed within a prescribed range of functions involving routine and non-routine methods as well as diagnostic procedures which require the exercise of some discretion and judgment. Prior to completion of this course, students will have completed an exam prep course and taken the Certified ECG Technician (CET) Exam by the National Healthcareer Association (NHA). The exam is a 100-question exam and students will have 2 hours to complete it. The exam is timed and proctored.</p>	Prerequisites: ECG104.	64
ECG106	Clinical Practicum	<p>This course serves as the clinical practicum for Electrocardiogram (ECG) Technician in which the students synthesize standard of care and scope of practice through diagnostic technology, patient assessment, patient advocacy, ethical and professional behaviors, critical thinking and decision making while in the healthcare industry setting. Mandatory attendance for all 80 hours is required for successful completion.</p>	Prerequisites: None.	80

ECH120	Contemporary Issues in Early Childhood	Designed to develop understanding of a broad range of contemporary issues that impact the child in today's society. Course directed at pre-service and in-service professionals.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH125	Writing for Early Childhood Professionals	Elements of effective written communication and use in the field of early childhood education. Practical experience using common classroom documents. Course surveys document purpose, readers needs, information organization, and clear expression of ideas	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH126AB	Play Lab-Toddlers	Participant observation within a laboratory play environment with children 13-35 months of age. Focus on preparation, management and evaluation of developmentally appropriate activities	Prerequisites: None.	L+L 1.0 2.0 2.0
ECH128	Early Learning: Play and the Arts	Examines theory, research and practices relating to play and the creative arts in early childhood. Considers practical constraints and alternative perspectives.	Prerequisites: None.	LEC 3.0 3.0 3.0
ECH140	Learning Made Visible Through Documentation	The study of documentation in early childhood environments including strategies to reflect on children's thinking, hypothesis development, and the multiple relationships essential in the learning environments.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH141	Explore the Fundamentals of the Reggio Emilia Approach	Investigation and critical examination of the integral elements of the organization and philosophy of the Reggio Emilia approach to early childhood education.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH176	Child Development	Study of the science of human development from conception through adolescence. Includes observation skills, parent and adult roles in the lives of children, and contemporary issues	Prerequisites: None.	LEC 3.0 3.0 3.0

ECH181	Enhancing Infant Development	Introduction to principles of development in infants from birth through 18 months. Emphasis on infant individuality and adult-infant interactions in practical care and play activities	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH182	Enhancing Toddler Development	Overview of the developmental needs of children from 15 through 30 months. Emphasis on the adult role in providing a safe, stimulating everyday environment where toddlers may explore, imitate and communicate with others	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH183	Infant/Toddler Learning Materials	Safety and design features of commercial, homemade, and household learning materials for children from birth through 30 months of age. Focus on matching items with children's developmental levels.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH190	Emergent Language and Literacy	Analyzing, assessing, and enhancing language and literacy development for the young child.	Prerequisites: None.	LEC 3.0 3.0 3.0
ECH236	Learning Materials for Young Children	Design aspects of traditional early childhood play materials examined for teaching/learning potential. Includes design, production, and field-testing of teacher-made devices	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH238	Computers in Early Childhood	Comparison of computers as a teaching device with traditional early childhood learning materials. Hands-on experience with child/computer interaction and software evaluation	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH253	National Credential Portfolio Development	Portfolio or resource file development, completion, and presentation. Self-assessment and credentialing planning, professional development, writing, and critical learning included.	Prerequisites: Permission of Program Director.	LEC 3.0 3.0 3.0



ECH267	Child Development Associate Preparation Practicum I	Participation in early childhood education related work experience for the purpose of final preparation for the Child Development Associate (CDA) national credential process.	Prerequisites: A grade of C or better in (CFS123, or CFS125, or CFS/ECH287) and (CFS/ECH271, or ECH280) and (CFS101AH, or CFS101AJ, or CFS101AP, or CFS101AR, or CFS160, or CFS/ECH275, or ECH236, or ECH279, or ECH281) and (CFS116, or ECH282, or ITD201) and (CFS285AA or ITD204).	LEC 1.0 1.0 1.0
ECH268	Child Development Associate Preparation Practicum II	Participation in early childhood education related work experience for the purpose of final preparation for the Child Development Associate (CDA) national credential process.	Prerequisites: A grade of C or better in (CFS178 or CFS194AB or CFS192 or CFS193) and (CFS/ECH287 or CFS278 or CFS196) and ECH270 and (CFS/ECH176 or CFS205).	LEC 1.0 1.0 1.0
ECH269	Child Care Seminar	Emphasizes the blend of job-related activities including career exploration, employment procedures, human relations, and on-the-job issues.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
ECH270	Observing Young Children	Introduction to techniques of observing young children. Recording methods, interpretation and use of collected information including legal and ethical implications.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH271	Arranging the Environment	Exploration of the influence of the environment on the behavior of young children. Indoor and outdoor spaces considered and analysis of environments practiced.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH272	Science for the Young Child	Methods and techniques for encouraging beginning scientific thinking among young children. Focus upon the theory of Jean Piaget	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH273	Math for the Young Child	Methods and techniques for encouraging the beginnings of mathematical/logical thought with young children. Focus upon the theory of Jean Piaget.	Prerequisites: None.	LEC 1.0 1.0 1.0

ECH274	Books and Verse for the Young Child	Introduction to verse, storytelling, books and bookmaking for infants, toddlers, and preschoolers. Information as well as storybooks considered	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH275	Literacy Development and the Young Child	Literacy from birth through the early childhood years. Focus on developmentally appropriate ways to encourage speaking, listening, writing, and reading in the home and classroom.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH279	Early Childhood Curriculum Development	An intensive focus on the process of building curriculum units appropriate to the developmental needs and abilities of the young child. Design, use and evaluation of materials and activities.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH280	Food Experiences with Young Children	A discussion of the nutritional needs of young children and the cultural and social meanings of foods, feeding and eating. Includes planning and managing food experiences in home and group settings	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH281	Movement/Music for the Young Child	Consideration of motor development in the toddler through the 8-year-old and exploration of age-appropriate rhythmic, musical and creative movement methods	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH282	Discipline/Guidance of Child Groups	Exploration of techniques for guiding children in groups with focus on individual child and adult needs for a disciplined environment	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH284AA	Early Childhood Teaching Internship	Work experience in child care centers. 80 hours of designated work per credit. Maximum of 6 credits allowed	Prerequisites: A grade of C or better in CFS176 ECH176 and permission of Department or Division Corequisites: CFS269 ECH269.	L+L 2.0 2.0 2.0
ECH284AB	Early Childhood Teaching Internship	Work experience in child care centers. 80 hours of designated work per credit. Maximum of 6 credits allowed	Prerequisites: A grade of C or better in CFS176 ECH176 and permission of Department or Division Corequisites: CFS269 ECH269.	L+L 3.0 3.0 3.0

ECH287	Professional Development in Early Childhood Education	Emerging professionalism within the field of early childhood education. Consideration of job responsibilities, rewards, ethics and current issues facing practitioners. Includes assessment and career planning.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH288	Community Resources and Referral	Survey of current community agencies, resources, and support groups for a variety of child and family needs. Considers appropriate procedures for referral, handling of information, confidentiality and follow up.	Prerequisites: None.	LEC 1.0 1.0 1.0
ECH298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ECH298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ECH298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ECN100	Economics in American Society	Selected principles of macroeconomic and microeconomic analysis. Recommended as a social science elective and for some paraprofessional programs. Not for business transfer students; credit will not be granted if ECN111 or ECN112 has been completed	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN105	Consumer Economics	The relationship between the consumer and the economy in American society. Socioeconomic forces that impact on consumer purchases, debt, and budgeting. Consumerism as a movement	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN110	Economics of Sports	Basic microeconomics principles applied to traditional product and factor market theory and analysis of contemporary economic issues in sports. Topics include market structures and outcomes, the market for franchises, barriers to entry, rival leagues, player productivity, and competitive and collusive behavior among participants.	Prerequisites: None.	LEC 3.0 3.0 3.0

ECN160	Economic History of the United States	A description of the trends of American population, industry, and wealth through examination of major American institutions, historical events, and economic thought. Emphasis on the roles of technology and natural resources in agriculture and industry, the labor force, the monetary system, market structures, and the economic impact of government	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN161	Economic History of the United States 1600-1870	Trends of American population, industry, and wealth through examination of major American institutions, historical events, and economic thought. Emphasis on the roles of technology and natural resources in agriculture and industry, the labor force, the monetary system, market structures, and the economic impact of government	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN162	Economic History of the United States 1870-present	Trends of American population, industry, and wealth through examination of major American institutions, historical events, and economic thought. Emphasis on the roles of technology and natural resources in agriculture and industry, the labor force, the monetary system, market structures, and the economic impact of government	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN165	The Border Economy	Introduction to the regional economic issues that exist on both sides of the United States-Mexico border. Consideration given to the historical and geographical forces that have impacted border economic development. Current issues examined, such as immigration, NAFTA(North American Free Trade Agreement) and the growth of maquiladoras	Prerequisites: None.	LEC 3.0 3.0 3.0

ECN170	Political Economy	The relationship between politics and economics in the United States, with emphasis on current issues and government responses. Consideration of problems raised by alternative political economic systems	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN200	Labor Leadership	Review of local union structure, union democracy, and local management from the perspective of the union leader, including the role of the local union in collective bargaining negotiations and the basic clauses of collective bargaining agreements. Grievance procedures, arbitration of contract problems, and legal requirements of local union government reports	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN201	Collective Bargaining	Development of collective bargaining theory and its implications for present day unionism and collective negotiations. Legal and union structure of American bargaining with particular emphasis on how each contributes to the bargaining process. Negotiations, strategy, and issues commonly involved in bargaining	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN202	Labor and the American Economy	Factors which shape wages and control labor supply in the labor market. How various factors combine to set wages in a free market economy and government activities affect the American labor market	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN203	Labor Law	Legal doctrines of conspiracy and restraint of trade as they apply to labor organizations. National Labor Relations Act and its regulatory impact on day-to-day labor relations. Current trends in private sector labor regulations with particular emphasis on the modifications by Taft-Hartley and Landrum-Griffin Acts	Prerequisites: None.	LEC 3.0 3.0 3.0

ECN204	Macroeconomic Issues	Macroeconomic principles applied to current problems of economic policy, e.g., inflation, unemployment, gross national product (GDP), forecasting, ramifications for the international system.	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN205	Government and Labor	Various programs operated by government in the area of labor relations, safety, health, discrimination, and the roll government plays as an employer. State and federal control of discrimination in the labor market and its effects on organized labor and management. Current federal and state regulations concerning organization of government employees and the practice of industrial and labor relations	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN206	Current Practice in Labor Law	An analysis of current trends in private sector labor regulations with particular emphasis on the modifications by Taft-Hartley and Landrum-Griffin Acts	Prerequisites: None.	LEC 1.0 1.0 1.0
ECN208	Microeconomic Issues	Microeconomic principles applied to current problems of market structure, consumer preference, supply and demand, and the theory of the firm. Topics will include contemporary events that are suitable for application of the economic way of thinking.	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN211	Macroeconomic Principles	A descriptive analysis of the structure and functioning of the American economy. Emphasis on basic economic institutions and factors that determine national income and employment levels. Consideration given to the macroeconomic topics of national income, unemployment, inflation and monetary and fiscal policies.	Prerequisites: None.	LEC 3.0 3.0 3.0

ECN212	Microeconomic Principles	Microeconomic analysis including the theory of consumer choice, price determination, resource allocation and income distribution. Includes non-competitive market structures such as monopoly and oligopoly; and the effects of government regulation.	Prerequisites: None.	LEC 3.0 3.0 3.0
ECN213	The World Economy	An analysis of the economic interdependence among nations, with emphasis on international trade and finance. Consideration given to the role and function of the multinational enterprise	Prerequisites: None.	L+L 3.0 3.0 3.0
ECN230	Urban Economics	Analysis of the structure and growth of the urban economy, with some focus on intrametropolitan organization and change. Consideration of the provision of public services within the Phoenix metropolitan area	Prerequisites: A grade of C or better in ECN212 or permission of Instructor.	LEC 3.0 3.0 3.0
ECN250	World Economic Systems	A descriptive analysis of capitalist, socialist and mixed economies. Some consideration also given to the problems of less developed economies	Prerequisites: None.	L+L 3.0 3.0 3.0
ECN263	The Economics of Natural Resources, Population and the Environment	Applies economic analysis to both the causes and possible remedies of the problems of environmental deterioration and natural resource depletion. Includes discussion of the economic problems of urban communities and the relationship between population and economic growth and the depletion of natural resources and environmental pollution	Prerequisites: A grade of C or better in ECN100 or ECN211 or ECN2112.	LEC 3.0 3.0 3.0
ECN280	Health Care Economics	Microeconomic analysis of the production and distribution of health care. Consideration given to the problems of government regulation	Prerequisites: A grade of C or better in ECN212 or permission of Instructor.	LEC 3.0 3.0 3.0



ECN296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ECN296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
ECN296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

ECN296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
ECN298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ECN298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ECN298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
EDA200	Adult Development	Exploration of adulthood. Includes research and theoretical approaches including physical, cognitive, social, and personality development. Examines the influences of age, gender, cohort, race/ethnicity, socioeconomic status, and culture.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDA220	Introduction to the Adult Learner	Provides an introduction to the field of adult education. Study of the adult as a learner, teaching-learning theories for adults, models and procedures for planning, designing, managing, and evaluating adult learning activities, and theories of motivation. Intended for practitioners who provide instruction to adults in a wide variety of workplace, community and lifelong learning arenas.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDA230	Curriculum Development in Adult Education	Study of the principles and techniques for development of curricula for adult education services and programs.	Prerequisites: A grade of C or better in EDA220 or permission of Department or Division.	LEC 3.0 3.0 3.0
EDA240	Teaching Methods for Adult Learning	Study of teaching strategies responsive to learning preferences of the adult learner.	Prerequisites: A grade of C or better in EDA220 and EDA230 or permission of Department or Division.	LEC 3.0 3.0 3.0

EDA241	Coaching Across Generations	Overview of coaching across multiple generations. Examination of generation characteristics, motivations, attitudes, and learning styles. Communication techniques also covered.	Prerequisites: None.	LEC 1.0 1.0 1.0
EDA242	Introduction to Adults with Learning Disabilities	Overview of adult learners with learning disabilities. Topics include neurological disorders, central auditory processing, and visual deficiencies. Educational rights, characteristics, identification procedures, workplace concerns, and instructional practices also covered.	Prerequisites: None.	LEC 2.0 2.0 2.0
EDA245	Introduction to Coaching: Theory to Practice	Introduction to coaching as a field of study. Exploration of the nature of the profession in addition to theories, skills, and issues relative to the profession.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDA246	Motivating Adult Learners	Overview of effective instruction as a consistent motivational process. Exploration of the influence of cultural relevance, adult learning styles, and intrinsic motivation on effective instruction. Also covers adult construction of knowledge.	Prerequisites: None.	LEC 1.0 1.0 1.0
EDA250	Mentoring the Adult Learner	Practice of mentoring as a process to provide effective on-the-job support and guidance to foster personal and professional growth of adult learners. Analyze the role of a mentor and practice how to build trust, clarify communication, and provide supportive feedback during collaborative planning, observation, and reflection activities.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDA254	Assessment and Evaluation of Adult Learners	Examination of the assessment of adult learning. Includes assessment criteria and development of various types of assessments and evaluations.	Prerequisites: A grade of C or better in EDA200 and EDA220.	LEC 1.0 1.0 1.0

EDA255	Ethical and Professional Principles	Examination of professional code of ethics for adult educators. Includes professional practices and standards for self, students, colleagues, community, and society.	Prerequisites: None.	LEC 1.0 1.0 1.0
EDA260	Coaching Practicum	Application of knowledge and skills in an applied coaching setting with supervision.	Prerequisites: A grade of C or better in (CFS204, CFS205, EDA240, EDA245, EDA246 and EDA250) or permission of Department or Division.	L+L 1.0 1.0 1.0
EDA265	Adult Educator Practicum	Practical application of knowledge and skills in an applied instructional setting with supervision.	Permission of Department.	LAB 1.0 1.0 1.0
EDM110	Montessori Philosophy/Elementary Classroom Management/Mathematics I	Montessori philosophy of education and principles of child development with emphasis on the 6-12 aged child. Comparison with contemporary theories of education. Areas and elements of Montessori Elementary classroom management. Montessori Mathematics I with focus on the history of numbers, linear concepts, the decimal system, the first part of arithmetic studies, fractions, and supplemental math concepts.	Prerequisites: A 4-year college degree and a grade of C or better in CFS/ECH176 or equivalent child development course, and Montessori 2.5-6 Certification, and permission of the Montessori Elementary Program Director. Corequisites: EDM111.	LEC 4.0 4.0 4.0
EDM111	Montessori 6-9 Language Arts/Grammar	Language Arts studies with focus on word study activities, reading skills, writing skills, and supplemental language areas. Grammar studies with focus on The Parts and Functions of Speech, and Sentence Analysis.	Prerequisites: A 4-year college degree and a grade of C or better in CFS/ECH176 or equivalent child development course, and Montessori 2.5-6 Certification, and permission of the Montessori Elementary Program Director. Corequisites: EDM110.	LEC 4.0 4.0 4.0
EDM112	Montessori 6-9 History and Science	History studies with focus on geological and biological earth history, and the development of civilizations. Science studies with focus on Chemistry and Physics.	Prerequisites: A grade of C or better in EDM110, EDM111 and permission of the Montessori Elementary Program Director.	LEC 3.0 3.0 3.0

EDM113	Montessori 6-9 Geography/Biology	Geography studies with focus on physical and political geography. Biology studies with focus on Zoology, Botany, Human Biology, and Ecology.	Prerequisites: A grade of C or better in EDM110, EDM111 and permission of the Montessori Elementary Program Director.	LEC 3.0 3.0 3.0
EDM114	Montessori 6-9 Mathematics II/Geometry	Mathematics II studies with focus on advanced multiplication and division. Geometry studies with focus on classified nomenclature, and comparison and measurement of geometric figures	Prerequisites: A grade of C or better in EDM112, EDM113 and permission of the Montessori Elementary Program Director. Corequisites: EDM115.	LEC 3.0 3.0 3.0
EDM115	Montessori 6-9 Practicum A Field	Focus on the development and implementation of curriculum, classroom management skills, teaching expertise, and professionalism.	Prerequisites: A grade of C or better in EDM112, EDM113 and permission of the Montessori Elementary Program Director. Corequisites: EDM114.	LAB 4.0 4.0 0.0
EDM116	Montessori 6-9 Curriculum Development and Design	Development of curriculum with focus on the creation and implementation of auxiliary programs for Practical Life, Visual Arts and Crafts, Music, Movement and Physical Education, and Computers. Elements of consideration for curriculum design, and choosing, adapting, and creating teaching materials.	Prerequisites: A grade of C or better in EDM114, EDM115 and permission of the Montessori Elementary Program Director.	LEC 3.0 3.0 3.0
EDM117	Montessori 6-9 Practicum B Field	Focus on the development and implementation of curriculum, classroom management skills, teaching expertise, and professionalism.	Prerequisites: A grade of C or better in EDM114, EDM115 and permission of the Montessori Elementary Program Director. Corequisites: EDM116.	LAB 4.0 4.0 0.0
EDM118	Montessori Elementary Leadership/Administration/Project Presentations	Leadership responsibilities and opportunities in Montessori and general education communities, working with a school's administration, and elements of the administration of a school. Presentation of independent study projects.	Prerequisites: A grade of C or better in EDM116 and EDM117 and permission of the Montessori Elementary Program Director.	LEC 2.0 2.0 2.0
EDM216	Montessori 9-12 Practicum B Field	Focus on the development and implementation of curricula, teaching expertise, classroom management skills, and professionalism.	Prerequisites: Permission of the Montessori Elementary Program Coordinator.	LAB 4.0 4.0 0.0

EDS250	Introduction to Student Services	Student affairs profession with standards and a theoretical base explored. Integrates theory and practice of student services, with the participants exploring on-the-job situations.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDS251	Fundamentals of Developmental Advising	Academic advising using student development and developmental advising theories and framework. Fundamentals of academic advising including roles and tasks as well as skills and techniques for effective advisement, use of resources, legal and ethical issues, and advising special populations.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDS252	Fundamentals of Student Affairs Management	Management functions in a Student Affairs Division of a college or university. Practical training to manage functional units in student affairs including budgeting, fiscal management, and human resource management	Prerequisites: A grade of C or better in EDS250.	LEC 3.0 3.0 3.0
EDS253	Law for Student Affairs Practitioners	Introduction to the laws, regulations, policies, and compliance issues that impact a student affairs division in higher education. Students will learn pertinent laws and their application to the work in student affairs, as well as risk management techniques to mitigate tort liability.	Prerequisites: A grade of C or better in EDS252 or permission of Department or Division chair.	LEC 3.0 3.0 3.0
EDS254	Student Services Internship	Student services work experience in a student affairs department of a college or university.	Prerequisites: A grade of C or better in EDS250 or permission of Department or Division Chair.	LAB 1.0 5.0 0.0
EDU101AA	Tutor Training and Practicum	Tutor training with an opportunity to gain insights into instructional support services through a minimum of 30 hours of supervised on-site experience within an educational setting. Overview of the role and responsibilities of instructional tutors as well as tutoring techniques, with particular focus on reading and writing strategies	Prerequisites: None.	LEC 1.0 1.0 1.0

EDU101AB	Tutor Training and Practicum	Tutor training with an opportunity to gain insights into instructional support services through a minimum of 60 hours of supervised on-site experience within an educational setting. Overview of the role and responsibilities of instructional tutors as well as tutoring techniques, with particular focus on reading and writing strategies	Prerequisites: Permission of Instructor.	LEC 2.0 2.0 2.0
EDU101AC	Tutor Training and Practicum	Tutor training with an opportunity to gain insights into instructional support services through a minimum of 90 hours of supervised on-site experience within an educational setting. Overview of the role and responsibilities of instructional tutors as well as tutoring techniques, with particular focus on reading and writing strategies	Prerequisites: Permission of Instructor.	LEC 3.0 3.0 3.0
EDU105	Substitute Teacher Training	Survey of issues important to substitute teaching in Arizona. Discussion of certification, professional behavior, and classroom techniques.	Prerequisites: None.	L+L 2 2 2
EDU110	Education in Film	Analysis of the portrayal of teaching, schooling and learning in mass media films, including documentary, feature length and emerging platforms. Considers historical, cultural, national and global perspectives on teaching, learning and schooling. Emphasis on identifying factors that contribute to successes as well as failures of schooling within a society.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU111	Inquiry-Based Instructional Approaches for Science and Mathematics I	Exploring teaching as a career option through observations and active participation in science or mathematics lessons. Supervised experience in planning and implementing inquiry-based science and/or mathematics lessons in elementary classroom settings.	Prerequisites: None.	L+L 1.0 2.0 2.0



EDU112	Inquiry-Based Instructional Approaches for Science and Mathematics II	Exploring teaching as a career option through observations and active participation in science or mathematics lessons. Supervised experience in planning and implementing inquiry-based science and/or mathematics lessons in middle school classroom settings.	Prerequisites: A grade of C or better in EDU111.	L+L 1.0 2.0 2.0
EDU204	Fine Arts in Educational Settings	Exploration of fine arts integration in the K-12 classroom setting. Focus on the impact on life-long learning and education goal achievement when curriculum includes fine arts. Arizona art standards of dance, visual, theater and music also covered.	Formal acceptance to a Maricopa Community College undergraduate state approved teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU207	Teaching Adolescents	Focuses on understanding adolescents' development including psychosocial, emotional, cognitive and physical. Covers impact of early experiences, relationships, and learning abilities. Establishment of a learning environment supportive of the adolescent emphasized.	Formal admission to an undergraduate teacher preparation program.	LEC 3.0 3.0 3.0
EDU208	Introduction to Structured English Immersion	Emphasis on understanding English Language Learners (ELL) in the mainstream classroom. Brief history, culture, theory, methods, and an introduction to both the English Language Proficiency (ELP) standards and the state-mandated English language proficiency assessment test covered. Includes review of alternative methods of assessment.	Prerequisites: None.	LEC 1.0 1.0 1.0
EDU209AA	Teaching Students with Emotional Disabilities	Investigation into the characteristics of and teaching strategies for students with emotional disabilities. Emphasis on Professional Teaching Standards.	Prerequisites: A grade of C or better in EDU222 and formal admission to an undergraduate teacher preparation program.	LEC 3.0 3.0 3.0
EDU209AB	Teaching Students with Learning Disabilities	Investigation into the characteristics of and teaching strategies for students with learning disabilities. Emphasis on Professional Teaching Standards.	Prerequisites: Formal admission to an undergraduate teacher preparation program and a grade of C or better in EDU222.	LEC 3.0 3.0 3.0

EDU209AC	Teaching Students with Mild and Moderate Intellectual Disabilities	Investigation into the characteristics of and teaching strategies for students with mild and moderate intellectual development disability. Emphasis on Professional Teaching Standards.	Prerequisites: Formal admission to an undergraduate teacher preparation program and a grade of C or better in EDU222.	LEC 3.0 3.0 3.0
EDU209AD	Teaching Students with Physical and Other Health Impairments	Investigation into the characteristics of and teaching strategies for students with physical and other health impairments. Emphasis on Professional Teaching Standards.	Prerequisites: Formal admission to an undergraduate teacher preparation program and a grade of C or better in EDU222.	LEC 3.0 3.0 3.0
EDU209AF	Assessment and Eligibility of Exceptional Learners	A basic overview of eligibility requirements for special services of students with disabilities, as well as investigation into the concepts, laws, issues, and procedures that relate to the formal and informal assessment of students with disabilities. Covers educational achievement tests and standardized diagnostic tests for students with disabilities as well as intelligence and adaptive behavior measurements. Explains the relationship between assessment data and instruction.	Prerequisites: Formal admission to an undergraduate teacher preparation program.	LEC 3.0 3.0 3.0
EDU215	Methods and Curriculum Development in Secondary Education	Overview and practical application of teaching methodology and curriculum development for secondary education teachers. Teaching strategies, curriculum design, lesson objectives, time management skills, teaching resources and student assessments covered. Professional Teaching Standards emphasized.	Formal admission to an undergraduate teacher preparation program.	LEC 1.0 1.0 1.0

EDU215AA	Methods and Curriculum Development in Secondary Social Studies	Overview and practical application of social studies teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized.	Prerequisites: Formal admission to an undergraduate teacher preparation program. Prerequisites: A grade of C or better in EDU215 or Corequisites: EDU215.	L+L 2.0 2.0 2.0
EDU215AB	Methods and Curriculum Development in Secondary Mathematics	Overview and practical application of mathematics teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized.	Prerequisites: Formal admission to an undergraduate teacher preparation program. Prerequisites: A grade of C or better in EDU215 or Corequisites: EDU215.	L+L 2.0 2.0 2.0
EDU215AC	Methods and Curriculum Development in Secondary Science	Overview and practical application of science teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized.	Prerequisites: Formal admission to an undergraduate teacher preparation program. Prerequisites: A grade of C or better in EDU215 or Corequisites: EDU215.	L+L 2.0 2.0 2.0
EDU215AD	Methods and Curriculum Development in Secondary English	Overview and practical application of English teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized.	Prerequisites: Formal admission to an undergraduate teacher preparation program. Prerequisites: A grade of C or better in EDU215 or Corequisites: EDU215.	L+L 2.0 2.0 2.0

EDU215AE	Methods and Curriculum Development in Secondary Education - Special Topics	Overview and practical application of teaching methodology and curriculum development for secondary teachers in special topics such as Music, Theater, Art, Economics, Foreign Languages, Computers, PE, etc. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized.	Prerequisites: Formal admission to an undergraduate teacher preparation program and (a grade of C or better in EDU215 or Corequisites: EDU215).	L+L 2.0 2.0 2.0
EDU219	Special Education Techniques and Methods	School-based experiences relating to the understanding of and teaching strategies for exceptional learners with mild/moderate mental retardation, learning disabilities, emotional disabilities, physical disabilities and/or other health related impairments. Provides opportunities for students to apply learning in the classroom.	Prerequisites: Formal admission to an undergraduate teacher preparation program and a grade of C or better in (EDU209AA, EDU209AB, EDU209AC and EDU209AD) and EDU222.	L+L 3.0 3.0 3.0
EDU220	Introduction to Serving English Language Learners (ELL)	Rationale for and current educational and legal issues for serving English Language Learners (ELL). Comparison and evaluation of various types of language educational models including Structured English Immersion (SEI), English as a Second Language (ESL) and bilingual/Dual Language Immersion(DLI). Includes SEI, ESL, and bilingual/DLI strategies.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU221	Introduction to Education	Overview of the historical, political, economic, social, and philosophical factors that influence education and make it so complex. Opportunity for students to assess their interest and suitability for teaching .	Prerequisites: None.	LEC 3.0 3.0 3.0

EDU222	Introduction to the Exceptional Learner	Overview of the exceptional learner with emphasis on factors relating to current practices, identification, characteristics, and educational adaptations. Issues related to mild disabilities, severe disabilities, emotional and behavioral disorders, intellectual disabilities, and students who are gifted.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU223AA	Emotional Disabilities in the Classroom	Investigation into the characteristics of and teaching strategies for students with emotional disabilities. Emphasis on Professional Teaching Standards. Includes current research findings related to teaching students with emotional disabilities.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in EDU222.	LEC 3.0 3.0 3.0
EDU223AB	Learning Disabilities in the Classroom	Investigation into the characteristics of and teaching strategies for students with learning disabilities. Emphasis on Professional Teaching Standards. Includes current research findings related to teaching students with learning disabilities.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in EDU222.	LEC 3.0 3.0 3.0
EDU223AC	Mild and Moderate Intellectual Disability in the Classroom	Investigation into the characteristics of and teaching strategies for students with mild and moderate intellectual disability. Emphasis on Professional Teaching Standards.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in EDU222.	LEC 3.0 3.0 3.0
EDU223AD	Physical and Other Health Impairments in the Classroom	Investigation into the characteristics of and teaching strategies for students with physical and other health impairments. Emphasis on Professional Teaching Standards. Includes current research findings related to teaching students with physical and other health impairments.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in EDU222.	LEC 3.0 3.0 3.0

EDU223AF	Assessment and Eligibility in Special Education	A basic overview of eligibility requirements for special services of students with disabilities, as well as investigation into the concepts, laws, issues, and procedures that relate to the formal and informal assessment of students with disabilities. Covers educational achievement tests and standardized diagnostic tests for students with disabilities as well as intelligence and adaptive behavior measurements. Includes current research findings related to assessing students with special needs and how assessment is used to inform and guide instruction.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 3.0 3.0 3.0
EDU224	Brain Development and Learning	Exploration of fine arts integration in the K-12 classroom setting. Focus on the impact on life-long learning and education goal achievement when curriculum includes fine arts. Arizona art standards of dance, visual, theater and music also covered.	Formal acceptance to a Maricopa Community College undergraduate state approved teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU225	Foundations for Serving English Language Learners (ELL)	Rationale for and current educational and legal issues for English Language Learners (ELL). Comparison and evaluation of various types of language educational models including Structured English Immersion (SEI), English as a Second Language (ESL) and bilingual.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU226	Methods in Special Education	School-based experiences relating to the understanding of and teaching strategies for exceptional learners with mild/moderate intellectual developmental disability, learning disabilities, emotional disabilities, physical disabilities and/or other health related impairments. Provides opportunities for students to apply learning in the classroom. Includes current research findings related to the application and learning in Special Education methods.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in EDU222 and (EDU223AA, EDU223AB, EDU223AC and EDU223AD).	L+L 3.0 3.0 3.0

EDU227	Social Studies Techniques and Methods	Overview of teaching elementary social studies. Topics include lesson plans preparation, teaching strategies, assessments, classroom management techniques and teaching resources. Emphasis on Professional Teaching Standards.	Formal admission to an undergraduate teacher preparation program.	LEC 3.0 3.0 3.0
EDU228AA	Reading and Decoding: Elementary	Focus on the theories, methods and models of the teaching and learning processes of reading in the elementary grades.	Formal acceptance to a Maricopa Community College undergraduate state approved teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU228AB	Reading and Decoding: Secondary	Focus on the theories, methods and models of teaching literacy and decoding in the content areas of secondary grades.	Formal admission to undergraduate teacher certification program.	LEC 3.0 3.0 3.0
EDU228AC	Reading and Decoding: Phonics Based	Overview of research, curricular content, and instructional practices associated with Research Based Systematic Phonics Instruction (RBSPi) and other methods for teaching reading. Emphasis on methods mandated by Arizona legislation. Covers the history of written language, alphabetic reading and writing systems, and implementation of effective methods for reading instruction.	Formal acceptance to a Maricopa Community College undergraduate state approved teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU229	Science Techniques and Methods	Overview and practical application of teaching elementary science. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on Professional Teaching Standards.	Formal admission to an undergraduate teacher preparation program.	LEC 3.0 3.0 3.0

EDU230	Cultural Diversity in Education	Examination of the relationship of cultural values to the formation of self-concept and learning styles. Examination of the role of prejudice, stereotyping and cultural incompatibilities in education. Emphasis on teacher preparation (preservice and/or inservice) to offer an equal educational opportunity to students of all cultural groups	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU231	Mathematics Techniques and Methods	Overview and practical application of teaching mathematics in K-8 grades. Development of lesson plans and assessment instruments emphasized. Current trends, Professional Teaching Standards, and National Council of Teachers of Mathematics Standards also covered.	Formal admission to an undergraduate teacher preparation program.	LEC 3.0 3.0 3.0
EDU232	Serving K-12 English Language Learners (ELL)	Rationale and current educational and legal issues for serving English Language Learners (ELL). Comparison and evaluation of various types of language educational models including Structured English Immersion (SEI), English as a Second Language (ESL) and bilingual. Includes SEI, ESL, and bilingual strategies. Includes current research findings related to teaching English language learners.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0



EDU233	Structured English Immersion, English as a Second Language, and Bilingual Teaching Methods	Methods of planning, developing, and analyzing lesson plans in all content areas using English Language Learners (ELL) proficiency standards. Emphasis on components of curriculum content, teaching strategies, development/evaluation/adaptation of teaching materials, and the role of culture in learning. Examines the alignment of ELL proficiency standards to state academic standards. Covers multiple assessment techniques, tracking of student progress using the state mandated English language proficiency assessment, and use of assessment results for placement and accommodation.	Prerequisites: A grade of C or better in (EDU220 or EPD220) or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU234	Role and Function of the Paraprofessional	Overview and understanding of the role and responsibilities of the Paraprofessional K-12 classroom. Covers appropriate strategies related to student interaction and communication, tutoring techniques, and leadership role in the classroom. Recognition of children with special needs and delivery of teacher identified support also included	Prerequisites: None.	LEC 2.0 2.0 2.0
EDU235	The Exceptional Learner	Overview of the exceptional learner, one who differs from the average or typical, with emphasis on factors relating to current practices, identification, characteristics, and educational adaptations. Issues related to mildly disabled, severely disabled, emotionally and behaviorally disordered, intellectual disabilities, and gifted students. Includes current research findings related to teaching exceptional learners.	Prerequisites: Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0

EDU236	Classroom Relationships	Analysis of K-12 classroom interactions, classroom environment, and classroom management skills from a teacher's point of view. Focus on classroom as a multidimensional environment in which principles of classroom design, communication, management, and resources determine effectiveness.	Prerequisites: None. EDU221 suggested but not required.	LEC 3.0 3.0 3.0
EDU237	Grades K-8 Structured English Immersion	A foundation course designed to serve needs of English Learners (EL) grades K-8. Includes comparison and evaluation of various language educational models including Structured English Immersion (SEI), bilingual classrooms and Individual Language Learner Plans. Also covers legal and historical foundations and language development. Emphasis on foundational language skills, instructional elements, teaching strategies, development/evaluation/differentiation of teaching materials and strategies, and culturally relevant instruction.	Prerequisites: Formal admission to an undergraduate educator preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU238	Grades 6-12 Structured English Immersion	A foundational course designed to serve needs of English Learners (EL) grades 6-12. Includes comparison and evaluation of various language educational models including Structured English Immersion (SEI), bilingual classrooms and Individual Language Learner Plans. Also covers legal and historical foundations, language acquisition theories, elements and domains in addition to instructional strategies for academic English development. Emphasis on foundational language skills, teaching strategies, development/evaluation/differentiation of teaching materials and strategies, and culturally relevant instruction.	Prerequisites: Formal admission to an undergraduate educator preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0

EDU239	Structured English Immersion Grades K-8	A foundation course designed to serve needs of English Learners (EL) grades K-8. Includes comparison and evaluation of various language educational models including Structured English Immersion (SEI), bilingual classrooms and Individual Language Learner Plans. Also covers legal and historical foundations and language development. Emphasis on foundational language skills, instructional elements, teaching strategies, development/evaluation/differentiation of teaching materials and strategies, and culturally relevant instruction.	Prerequisites: Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate educator preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU240	Structured English Immersion Grades 6-12	A foundational course designed to serve needs of English Learners (EL) grades 6-12. Includes comparison and evaluation of various language educational models including Structured English Immersion (SEI), bilingual classrooms and Individual Language Learner Plans. Also covers legal and historical foundations, language acquisition theories, elements and domains in addition to instructional strategies for academic English development. Emphasis on foundational language skills, teaching strategies, development/evaluation/differentiation of teaching materials and strategies, and culturally relevant instruction.	Prerequisites: Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate educator preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0

EDU241	Special Education: Language Development and Disorders	Language development and language acquisition of typical children and children with disabilities. Includes language characteristics of children with a variety of disabilities and the creation of enhanced learning experiences in the classroom. Covers the referral process, as well as augmentative and alternative communication tools. Also compares Language Disorders and Language Differences.	Prerequisites: Formal admission to an undergraduate teacher preparation program or permission of Department or Division.	LAB 2.0 2.0 2.0
EDU242	Language Developmental and Disorders	Language development and language acquisition of typical children and children with disabilities. Includes language characteristics of children with a variety of disabilities and the creation of enhanced learning experiences in the classroom. Covers the referral process, as well as augmentative and alternative communication tools. Also compares Language Disorders and Language Differences.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LAB 2.0 2.0 2.0
EDU243	Effective Collaboration and Communication Practices in Special Education	Principles of effective collaboration, consultation, and co-teaching to improve programs, services, and outcomes for individuals with exceptionalities and their families. Includes critical interpersonal communication strategies and tools for working with diverse groups of people in addition to the benefits of collaboration as well as the challenges that educators currently face.	Prerequisites: Formal admission to an undergraduate teacher preparation program or permission of Department or Division.	LAB 1.0 1.0 1.0

EDU244	Special Education Collaboration and Communication Practices	Principles of effective collaboration, consultation, and co-teaching to improve programs, services, and outcomes for individuals with exceptionalities and their families. Includes critical interpersonal communication strategies and tools for working with diverse groups of people in addition to the benefits of collaboration as well as the challenges that educators currently face.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LAB 1.0 1.0 1.0
EDU245	Games for Teaching and Learning	Survey of past and present games for teaching and learning from multiple cultures and continents. Exploration of the potential for games to help us: face challenges; solve problems; enhance our quality of life; and render our experience of the world in a more meaningful way. Applies theories of learning to determine best practices in game design, development, and production. Demonstrates how to align instructional content with appropriate game-based mechanics and thinking. Culminates in the prototype of a game for teaching and learning.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and (RDG100 or RDG100LL or RDG111 or RDG112 or RDG113) or satisfactory score on District reading placement exam or permission of Instructor.	LEC 3.0 3.0 3.0
EDU250	Teaching and Learning in the Community College	The history, functions, organization and current issues in the community/junior college with emphasis on the Arizona community colleges. Includes focus on the design and practice of effective community college teaching and learning with special emphasis on the Maricopa County Community College District	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU252	Education Portfolio Development	Design, develop, and publish a portfolio. Showcase knowledge, skill, and experience related to a career in teaching.	Prerequisites: None.	LEC 1.0 1.0 1.0

EDU253	Analyzing Behavior and Managing the Classroom	Analyzing behavior and classroom management techniques. Classroom discipline models, student behavior and misbehavior, group dynamics, student self-motivation and learning styles covered. Professional Teaching Standards emphasized.	Prerequisites: Formal acceptance to a Maricopa Community College undergraduate state approved teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU254	Education Internship	Teaching experience in PK-12 classroom setting. Required to work 120 hours. Supervised and evaluated by a faculty coordinator.	Prerequisites: Permission of Department or Division and admission into a post-baccalaureate teacher certification program.	LAB 1.5 7.5 0.0
EDU255AA	Intern Certificate Student Teaching Lab Elementary Education	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 4.0 12.0 0.0
EDU255AB	Intern Certificate Student Teaching Lab Elementary Education	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU255AA and a minimum of 50% successful completion of all designated required course work.	LAB 4.0 12.0 0.0
EDU255AC	Intern Certificate Student Teaching Lab - Elementary Education I	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 2.0 6.0 0.0

EDU255AD	Intern Certificate Student Teaching Lab - Elementary Education II	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU255AC and a minimum of 25% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU255AE	Intern Certificate Student Teaching Lab - Elementary Education III	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU255AD and a minimum of 50% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU255AF	Intern Certificate Student Teaching Lab - Elementary Education IV	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU255AE and a minimum of 75% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU256AA	Intern Certificate Student Teaching Lab Secondary Education	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 4.0 12.0 0.0

EDU256AB	Intern Certificate Student Teaching Lab Secondary Education	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU256AA and a minimum of 50% successful completion of all designated required course work.	LAB 4.0 12.0 0.0
EDU256AC	Intern Certificate Student Teaching Lab - Secondary Education I	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 2.0 6.0 0.0
EDU256AD	Intern Certificate Student Teaching Lab - Secondary Education II	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU256AC and a minimum of 25% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU256AE	Intern Certificate Student Teaching Lab - Secondary Education III	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU256AD and a minimum of 50% successful completion of all designated required course work.	LAB 2.0 6.0 0.0



EDU256AF	Intern Certificate Student Teaching Lab - Secondary Education IV	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU256AE and a minimum of 75% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU257AA	Intern Certificate Student Teaching Lab Special Education	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 4.0 12.0 0.0
EDU257AB	Intern Certificate Student Teaching Lab Special Education	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU257AA and a minimum of 50% successful completion of all designated required course work.	LAB 4.0 12.0 0.0
EDU257AC	Intern Certificate Student Teaching Lab - Special Education I	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 2.0 6.0 0.0

EDU257AD	Intern Certificate Student Teaching Lab - Special Education II	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU257AC and a minimum of 25% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU257AE	Intern Certificate Student Teaching Lab - Special Education III	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU257AD and a minimum of 50% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU257AF	Intern Certificate Student Teaching Lab - Special Education IV	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EDU257AE and a minimum of 75% successful completion of all designated required course work.	LAB 2.0 6.0 0.0
EDU260AA	Art Methods and Curriculum Development for Elementary	Overview and practical application of teaching elementary art. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0
EDU260AB	Art Methods and Curriculum Development for Secondary	Overview and practical application of teaching secondary art. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0

EDU261AA	Dance Methods and Curriculum Development for Elementary	Overview and practical application of teaching elementary dance and movement. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0
EDU261AB	Dance Methods and Curriculum Development for Secondary	Overview and practical application of teaching secondary dance and movement. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0
EDU262AA	Dramatic Arts Methods and Curriculum Development for Elementary	Overview and practical application of teaching elementary dramatic arts. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0
EDU262AB	Dramatic Arts Methods and Curriculum Development for Secondary	Overview and practical application of teaching secondary dramatic arts. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0
EDU263AA	Music Methods and Curriculum Development for Elementary	Overview and practical application of teaching elementary music. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0
EDU263AB	Music Methods and Curriculum Development for Secondary	Overview and practical application of teaching secondary music. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 4.0 4.0 4.0

EDU268	Secondary School Dynamic Instruction	Overview and practical application of teaching methodology for secondary education teachers. Teaching strategies for direct instruction, cooperative learning, problem-based instruction and experiential learning covered. Professional Teaching Standards emphasized.	Prerequisites: Formal admission to an undergraduate teacher preparation program and (a grade of C or better in EDU215 or Corequisites: EDU215).	LEC 2.0 2.0 2.0
EDU269	Methods of Integrating Technology into Curriculum	Overview and practical application of teaching methodology for integrating technology into curriculum development for teachers. Examination of the necessary skills students need to meet national technology standards. Lesson plan development emphasized	Prerequisites: A grade of C or better in EPD260 or Permission of Department or Division.	LEC 3.0 3.0 3.0
EDU270	Learning and the Brain	Teaching and learning issues within a cognitive processes context. Covers emotion, memory, and recall as well as early brain development and its relationship to learning. Emphasis on current neuroscientific brain research and how it impacts teaching practice in preK-12 classrooms.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU270AA	Elementary Reading and Decoding	Focus on the theories, methods and models of the teaching and learning processes of reading in the elementary grades. Includes current research findings related to methods of teaching reading in the elementary school setting. Approved school-based practicum required.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU270AB	Secondary Reading and Decoding	Focus on the theories, methods and models of teaching literacy and decoding in the content areas of secondary grades.	Baccalaureate Degree and formal admission to a state approved Post Baccalaureate teacher preparation program.	LEC 3.0 3.0 3.0

EDU271	Phonics Based Reading and Decoding	Overview of research, curricular content, and instructional practices associated with Research Based Systematic Phonics Instruction (RBSPI) and other methods for teaching reading. Covers the history of written language, alphabetic reading, and writing systems, and implementation of effective methods for reading instruction.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU272	Educational Psychology	Focus on the study and application of psychological principles, theories, and methodologies related to teaching and learning. Emphasis on developmental, learning, and motivational theories. Current trends also covered.	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU274	Understanding Adolescent Behavior in the Classroom	Focuses on understanding adolescents' development including psychosocial, emotional, cognitive and physical. Covers impact of early experiences, relationships, and learning abilities. Establishment of a learning environment supportive of the adolescent emphasized. Includes current research findings related to adolescents.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 3.0 3.0 3.0
EDU276	Classroom Management and Behavior Analysis	Classroom management techniques, and behavior analysis. Classroom discipline models, student behavior and misbehavior, group dynamics, student self-motivation and learning styles covered. Professional Teaching Standards emphasized.	Prerequisites: Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EDU277AA	Elementary Student Teaching	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Formal admission to an undergraduate teacher preparation program and a grade of C or better in (EDU217, EDU227, EDU229, EDU231, EDU285AB and EDU287AB) and permission of Department or Division.	LAB 8.0 5.0 5.0

EDU277AB	Secondary Student Teaching	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Formal admissions to an undergraduate teacher preparation program and a grade of C or better in (EDU207, EDU215, EDU217, EDU285AB and EDU287AB) and permission of Department or Division.	LAB 8.0 5.0 5.0
EDU277AC	Special Education: Cross-Categorical Student Teaching	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Formal admission to an undergraduate teacher preparation program and a grade of C or better in (EDU209AF, EDU219, EDU231, EDU285AB and EDU287AB) and permission of Department or Division.	LAB 8.0 5.0 5.0
EDU278	Educational Assessment and Evaluation	Examination of assessing student performance. Assessment criteria and development of various types of assessment covered. Instructor developed assessments emphasized. Standardized, norm-referenced and criterion-referenced tests also included. Arizona State Board of Education Professional Teaching Standards emphasized	Prerequisites: A grade of C or better in EDU272.	LEC 3.0 3.0 3.0
EDU282AA	Service-Learning Experience in Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
EDU282AB	Service-Learning Experience in Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
EDU282AC	Service-Learning Experience in Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
EDU283AA	Using Storytelling in Educational Settings	The application of storytelling and storytelling activities in educational settings	Prerequisites: None.	LEC 1.0 1.0 1.0

EDU284	Dynamic Teaching in the Secondary School	Overview and practical application of teaching methodology for secondary education teachers. Teaching strategies for direct instruction, cooperative learning, problem-based instruction and experiential learning covered. Professional Teaching Standards emphasized. Includes current research findings related to secondary education teaching methods.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 2.0 2.0 2.0
EDU285	Education Seminar	Special topics in education with an emphasis on current issues not covered in education courses.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
EDU285AA	Education Program Seminar	Overview of the teacher education program model, Arizona State Teaching Standards and the Arizona Educator Proficiency Assessments. Educational program policies and procedures emphasized. Includes basic skills assessment and fingerprinting regulations.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 1.0 1.0 1.0
EDU285AB	Current Perspectives in Education	Focus on the importance of standards and their relationship to teaching and learning. Instructional design tools for standard based activities and their application in the classroom emphasized. Includes instructional design, resource management, and assessment rubrics. Educational program policies and procedures also covered.	Formal admission to an undergraduate teacher preparation program.	LEC 1.0 1.0 1.0
EDU285AC	Education Perspectives	Focus on the importance of standards and their relationship to teaching and learning. Instructional design tools for standard based activities and their application in the classroom emphasized. Includes instructional design, resource management, and assessment rubrics.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 1.0 1.0 1.0

EDU285AD	Seminar: Education Program Model	Overview of the teacher education program model, professional teaching standards, and teacher certification exams. Educational program policies and procedures emphasized. Includes basic skills assessment and fingerprinting regulations.	Formal acceptance to a Maricopa Community College undergraduate state approved teacher preparation program or permission of Department or Division.	LEC 1.0 1.0 1.0
EDU287AA	Master Teacher Seminar I	Special topics in education with an emphasis on current issues not covered in education courses.	Prerequisites: Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 1.0 1.0 1.0
EDU287AB	Master Teacher Seminar II	Special topics in education with an emphasis on current issues not covered in education courses.	Formal admission to an undergraduate teacher preparation program.	LEC 1.0 1.0 1.0
EDU287AC	Master Teacher Seminar III	Special topics in education with an emphasis on current issues not covered in education courses.	Baccalaureate degree and formal admission to a state approved post baccalaureate teacher preparation program.	LEC 1.0 1.0 1.0
EDU287AD	Master Teacher Seminar IV	Special topics in education with an emphasis on current issues not covered in education courses.	Formal acceptance to a Maricopa Community College undergraduate state approved teacher preparation program or permission of Department or Division.	LEC 1.0 1.0 1.0
EDU288AA	Student Teaching Lab - Elementary	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in EDU251 and permission of Department or Division.	LAB 8.0 5.0 0.0



EDU288AB	Student Teaching Lab - Secondary	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in EDU251 and permission of Department or Division.	LAB 8.0 5.0 0.0
EDU288AC	Special Education: Cross-Categorical - Lab	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and (EDU223AA EDU223AB EDU223AC EDU223AD EDU223AF EDU226 EDU285AC EDU287AC and EDU293) and permission of Department or Division.	LAB 8.0 5.0 0.0
EDU289	Secondary Methods and Curriculum Development	Overview and practical application of teaching methodology and curriculum development for secondary education teachers. Teaching strategies, curriculum design, lesson objectives, time management skills, teaching resources and student assessments covered. Professional Teaching Standards emphasized. Includes current research findings related to secondary education methods and curriculum development.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 1.0 1.0 1.0

EDU289AA	Secondary Social Studies Methods and Curriculum Development	Overview and practical application of social studies teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized. Includes current research findings related to the application and learning of secondary social studies content; the methods alignment will be centered around History, Geography, Economics, or Political Science.	Prerequisites: Baccalaureate Degree and acceptance of formal application into a state approved post-baccalaureate teacher preparation program or permission of Department or Division. A grade of C or better in EDU289 or Corequisites: EDU289.	L+L 2.0 2.0 2.0
EDU289AB	Secondary Mathematics Methods and Curriculum Development	Overview and practical application of mathematics teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized. Includes current research findings related to the application and learning of secondary mathematics content.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program. Prerequisites: A grade of C or better in EDU289 or Corequisites: EDU289.	L+L 2.0 2.0 2.0
EDU289AC	Secondary Science Methods and Curriculum Development	Overview and practical application of science teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized. Includes current research findings related to the application and learning of secondary science content.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program. Prerequisites: A grade of C or better in EDU289 or Corequisites: EDU289.	L+L 2.0 2.0 2.0

EDU289AD	Secondary English Methods and Curriculum Development	Overview and practical application of English teaching methodology and curriculum development for secondary teachers. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized. Includes current research findings related to the application and learning of secondary English content.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program. Prerequisites: A grade of C or better in EDU289 or Corequisites: EDU289.	L+L 2.0 2.0 2.0
EDU289AE	Secondary Methods and Curriculum Development in Special Topics	Overview and practical application of teaching methodology and curriculum development for secondary teachers in special topics such as Music, Theater, Art, Economics, Foreign Languages, Computers, PE, etc. Teaching strategies and learning styles covered. Curriculum design, lesson objectives, time management skills, teaching resources and student assessment also included. Professional Teaching Standards emphasized. Includes current research findings related to specific content teaching areas in Secondary Education.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program. Prerequisites: A grade of C or better in EDU289 or Corequisites: EDU289.	L+L 2.0 2.0 2.0
EDU289AF	Secondary Physical Education Methods and Curriculum Development	Overview and practical application of teaching physical education. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on Professional Teaching Standards. Includes current research findings related to the application and learning of secondary physical education content.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program. Prerequisites: A grade of C or better in EDU289 or Corequisites: EDU289.	L+L 2.0 2.0 2.0

EDU290	Science Methods and Curriculum Development	Overview and practical application of teaching elementary science. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on Professional Teaching Standards. Includes current research findings related to the application and learning of elementary science content.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 3.0 3.0 3.0
EDU291	Children's Literature	Review of folk and modern literature from a variety of world cultures, including application of literary criteria to folk and modern literature for children	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU292	The Art Of Storytelling	Explore the art and origin of storytelling. Provide a variety of storytelling techniques, styles and exercises to enhance the delivery of telling stories. Assist in the integration and application of storytelling to the learning environment in the classroom	Prerequisites: None.	LEC 3.0 3.0 3.0
EDU293	Mathematics Methods and Curriculum Development	Overview and practical application of teaching mathematics in K-8 grades. Development of lesson plans and assessment instruments emphasized. Current trends, Professional Teaching Standards and National Council of Teachers of Mathematics Standards also covered. Includes current research findings related to the application and learning of elementary mathematics content.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 3.0 3.0 3.0
EDU294	Multicultural Folktales	Study of multicultural folktales, exploring the impact of the oral tradition in American society and showing classroom applications	Prerequisites: None.	LEC 3.0 3.0 3.0

EDU295	Social Studies Methods and Curriculum Development	Overview of teaching elementary social studies. Topics include lesson plans preparation, teaching strategies, assessments, classroom management techniques and teaching resources. Emphasis on Professional Teaching Standards. Includes current research findings related to the application and learning of elementary social studies content.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program.	LEC 3.0 3.0 3.0
EDU296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completed at least 12 credits, min 2.6 GPA and able to obtain a position related to student's academic/career goals or permission of Instructor. Corequisites: Enrolled in at least 1 class related to major/career interest or permission of Instructor.	LAB 1.0 5.0 0.0
EDU296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completed at least 12 credits, min 2.6 GPA and able to obtain a position related to student's academic/career goals or permission of Instructor. Corequisites: Enrolled in at least 1 class related to major/career interest or permission of Instructor.	LAB 2.0 10.0 0.0
EDU296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completed at least 12 credits, min 2.6 GPA and able to obtain a position related to student's academic/career goals or permission of Instructor. Corequisites: Enrolled in at least 1 class related to major/career interest or permission of Instructor.	LAB 3.0 15.0 0.0

EDU296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completed at least 12 credits, min 2.6 GPA and able to obtain a position related to student's academic/career goals or permission of Instructor. Corequisites: Enrolled in at least 1 class related to major/career interest or permission of Instructor.	LAB 4.0 20.0 0.0
EDU298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
EDU298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

EDU298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
EEC200	Early Learning Foundations	Overview of early childhood education (birth to age eight) in American society, including current issues and responsibilities. Emphasis on issues of professionalism, ethics and program types. Opportunities for students to explore potential career paths.	Must hold a provisional or standard elementary or special education teaching certificate or permission of Department or Division.	LEC 3.0 3.0 3.0
EEC201	Early Learning Guidance and Management	Principles for guiding young children in early care and education environments. Exploration of guidance, management, and how the environment impacts the lives of typical and atypical young children. Includes observation of classrooms of children ages birth to age eight.	Must hold a provisional or standard elementary or special education teaching certificate or permission of Department or Division.	LEC 3.0 3.0 3.0
EEC202	Early Learning Introduction to the Exceptional Young Child	Overview of the exceptional learner (birth to age eight), one who differs from the average or the norm, with emphasis on observation, techniques, characteristics, identification, types of programs, and work with families. Issues related to learning exceptionalities, sensory and communication disorders, social and emotional problems, physical and health related disorders, and giftedness.	Must hold a provisional or standard elementary or special education teaching certificate or permission of Department or Division.	LEC 3.0 3.0 3.0

EEC203	Early Learning Culture, Community, Family and the Child	Examines family, community and cultural influences on development of the young child birth to third grade. Considers trends and threats to attachment, relationships and cultural identity. Includes social and emotional experiences and their impact on the developing brain.	Must hold a provisional or standard elementary or special education teaching certificate or permission of Department or Division.	LEC 3.0 3.0 3.0
EEC204	Early Learning Language and Literacy Development	Overview of language development, emergent literacy, early literacy development, and appropriate early experiences with books, reading, and writing for typical and atypical children birth to age eight. Emphasis placed on reading and writing readiness, methods to enhance literacy development, and strategies for selecting and using children's books.	Must hold a provisional or standard elementary or special education teaching certificate or permission of Department or Division.	LEC 3.0 3.0 3.0
EEC205	Early Learning: Instructional Methodologies of Language, Math, Science, Social Studies and the Arts	Overview and practical application of teaching elementary language, math, science, social studies and the arts. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on Early Learning Standards (Birth to Age 5), Arizona Academic Standards Kindergarten-Third (K-3) Grade, and State Board of Education Professional Teaching Standards.	Must hold a provisional or standard elementary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EEC206	Standards, Observation and Assessment of Typical and Atypical Behaviors	Observation and assessment of typical and atypical behaviors, overview of standards, observation and assessment methodologies for typical and atypical young children birth to age eight. Includes ethics, referral and reporting procedures, and collaboration with families and other professionals.	Prerequisites: A grade of C or better in EEC200, EEC201, EEC202, EEC203, EEC204, EEC205 and must hold a provisional or standard elementary or special education teaching certificate or permission of Department or Division.	LEC 3.0 3.0 3.0



EEC222	Early Learning: The Developing Child Prenatal to Age Eight	Examination of process of physical, social, emotional, cognitive, language, and literacy development of typical and atypical young children; prenatal through age eight. Consideration of public health issues and safety procedures within early childhood settings. Overview of nutritional needs and issues of physical fitness and well-being in typical and atypical young children.	Prerequisites: Must hold a provisional or standard elementary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EEC295	Early Learning: Infant/Toddler/Preschool Internship	Internship/work experience with infants, toddlers and/or preschoolers in early care and education settings.	Prerequisites: (EEC200, EEC201, EEC202, EEC203, EEC204, EEC205, and EEC206), and (must hold a provisional or standard elementary, or special education teaching certificate, or permission of Department or Division).	LEC 4.0 4.0 4.0
EEC297	Early Learning: Student Teaching Lab	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness	Prerequisites: Must hold a provisional or standard elementary, secondary, special education or career/technical teaching certificate, or permission of Department or Division.	LAB 4.0 5.0 0.0
EED111	Multimedia and the Early Childhood Education Classroom	Explore theories and teaching strategies of utilizing multimedia with children birth through 8 years of age. Examine usage of various multimedia in early childhood education settings. Explore ways to integrate appropriate multimedia usage into learning. Explore the use of multimedia and ECE professional growth	Prerequisites: None.	LEC 3.0 3.0 3.0
EED200	Foundations of Early Childhood Education	Overview of early childhood education (birth to age eight) in American society, including current issues and responsibilities. Emphasis on issues of professionalism, ethics and program types. Opportunities for students to explore potential career paths	Prerequisites: None.	LEC 3.0 3.0 3.0

EED205	The Developing Child: Prenatal to Age Eight	Examination of process of physical, social, emotional, cognitive, language, and literacy development of typical and atypical young children; prenatal through age eight. Includes practical application and fieldwork experience	Prerequisites: None.	LEC 3.0 3.0 3.0
EED210	Creative and Cognitive Play	Benefits of play for children birth to 8 years of age. Inclusion of art, music, and movement used in all dimensions of play. Identify uses and roles in the development of children.	Prerequisites: A grade of C or better in CFS176 ECH176, or CFS235, or EED205.	LEC 3.0 3.0 3.0
EED211	Language Acquisition in the Young Child	Define speech and language and discuss theories of language acquisition in young children, birth through 8 years of age in a variety of settings. Explore techniques to encourage and support the development of language, assessment techniques and family involvement.	Prerequisites: A grade of C or better in CFS/ECH176, or CFS235, or EED205.	LEC 3.0 3.0 3.0
EED212	Guidance, Management and the Environment	Principles for guiding young children in early care and education environments. Exploration of guidance, management, and how the environment impacts the lives of young children. Includes observation of classrooms of children ages birth to age eight	Prerequisites: None.	LEC 3.0 3.0 3.0
EED215	Early Learning: Health, Safety, Nutrition and Fitness	Consideration of public health issues and safety procedures within early childhood settings, serving young children birth to age eight. Overview of nutritional needs and issues of physical fitness and well-being in young children. Includes field experiences	Prerequisites: None.	LEC 3.0 3.0 3.0

EED220	Child, Family, Community and Culture	Examines family, community and cultural influences on development of the young child (birth to age eight). Considers trends and threats to attachment, relationships and cultural identity. Includes social and emotional experiences and their impact on the developing brain.	Prerequisites: None.	LEC 3.0 3.0 3.0
EED222	Introduction to the Exceptional Young Child: Birth to Age Eight	Overview of the exceptional learner (birth - age eight), one who differs from the average or the norm, with emphasis on observation, techniques, characteristics, identification, types of programs, and work with families. Issues related to learning exceptionalities, sensory and communication disorders, social and emotional problems, physical and health related disorders, and giftedness. Includes field experience	Prerequisites: None.	LEC 3.0 3.0 3.0
EED225	Language and Literacy in the Context of Culture and Relationships	Introduces children's language acquisition and literacy development. Exploration of the relationships among language, literacy, family, culture, and community. Study of educational practices and advocacy opportunities that support language acquisition, literacy development and the preservation of heritage languages.	Prerequisites: None.	LEC 3.0 3.0 3.0
EED245	Early Learning: Language Acquisition and Literacy Development	Overview of language acquisition and development, emergent literacy, early literacy development, and appropriate early experiences with books, reading, and writing for typical and atypical children birth to age eight. Emphasis placed on reading and writing readiness, methods to enhance literacy development, and strategies for selecting and using children's books.	Prerequisites: None.	LEC 3.0 3.0 3.0

EED250	Early Literacy Development	Overview of emergent literacy, early literacy development, and appropriate early experiences with books, reading, and writing. Emphasis placed on reading and writing readiness, methods to enhance literacy development, and strategies for selecting and using children's books	Prerequisites: None.	LEC 3.0 3.0 3.0
EED255	Portfolio Development and Writing for the Profession	Portfolio development, completion, and presentation. Self-assessment and educational short-term and long-term planning, professional development, writing and critical learning included.	Prerequisites: A grade of C or better in completion of twelve (12) credit hours of EED Early Education coursework and permission of Program Coordinator.	LEC 3.0 3.0 0.0
EED260	Early Childhood Infant/Toddler Internship	Work experience with infants and toddlers in early care and education settings. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	LAB 1.0 1.0 0.0
EED261	Early Childhood Preschool Internship	Work experience with preschoolers in early care and education settings. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	LAB 1.0 1.0 0.0
EED262	Early Childhood Internship: Infant/Toddler	Work experience with infants and toddlers in early care and education settings.	Prerequisites: Permission of Department or Division.	LAB 2 2 0
EED263	Early Childhood Internship: Preschool	Work experience with preschoolers in early care and education settings.	Prerequisites: Permission of Department or Division.	LAB 2.0 2.0 0.0
EED265	Early Childhood Internship: K-3	Supervised student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: A grade of C or better in EED200, EED212, EED215, EED220, EED222, EED270, EED275, and EED280.	LAB 4.0 5.0 0.0
EED270	Early Learning Development: Birth to Age Eight	Teaching and early learning issues within a cognitive processes context. Covers emotion, memory, and recall as well as early brain development and its relationship to early learning for the young child, birth to age eight.	Prerequisites: A grade of C or better in CFS/ECH176 or CFS205 or CFS235 or EED205 or permission of instructor.	LEC 3.0 3.0 3.0

EED272	Early Childhood Educational Psychology	Focus on the study and application of psychological principles, theories, and methodologies related to early childhood teaching and learning. Emphasis on early childhood developmental, learning, and motivational theories. Current trends also covered	Prerequisites: None.	LEC 3.0 3.0 3.0
EED275	Early Learning Curriculum and Instruction: Math and Science	Overview and practical application of teaching math and science concepts to typical and atypical toddlers, preschoolers, and students Kindergarten-third grade (K-3). Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on overview and practical application of National Association for the Education of Young Children Standards, Early Learning Standards, Arizona Academic Standards (K-3), State Board of Education Professional Teaching Standards and National Council of Teachers of Mathematics Standards.	Prerequisites: A grade of C or better in CFS/ECH176 or EED205.	LEC 3.0 3.0 3.0
EED277	Early Learning Curriculum and Instruction: Language Arts, Social Studies, Art, Music and Movement	Overview and practical application of teaching language arts, social studies, art, music and movement to typical and atypical toddlers, preschoolers, and students K-3. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on overview and practical application of National Association for the Education of Young Children Standards, Early Learning Standards, Arizona Academic Standards (K-3), and State Board of Education Professional Teaching Standards.	Prerequisites: A grade of C or better in CFS/ECH176 or EED205.	LEC 3.0 3.0 3.0

EED278	Early Learning: Curriculum and Instruction - Birth/Preschool	Considerations and evaluations of curriculum appropriate to the developmental characteristics of learners, birth through five years. Includes how early childhood standards, philosophies, and program settings relate to the teaching, learning, and assessment process. Includes field experience	Prerequisites: A grade of C or better in EED200.	LEC 3.0 3.0 3.0
EED280	Standards, Observation & Assessment of Typical/Atypical Behaviors of Young Children Birth to Age Eight	Standards, observation, and assessment of typical and atypical behaviors, overview of standards, observation and assessment methodologies for typical and atypical young children (birth to age eight). Includes ethics, referral and reporting procedures, and collaboration with families and other professionals.	Prerequisites: A grade of C or better in CFS/ECH176 or CFS235 or EED205.	LEC 3.0 3.0 3.0
EED282AA	Service-Learning Experience in Early Childhood Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
EED282AB	Service-Learning Experience in Early Childhood Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
EED282AC	Service-Learning Experience in Early Childhood Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
EEE120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean switching algebra and circuit minimization techniques. Analysis and design of combinational logic, flip-flops, simple counters, registers, ROMs, PLDs, synchronous and asynchronous sequential circuits, and state reduction techniques. Building physical circuits.	Prerequisites: None. Corequisites: CSC100 or CSC110 or permission of Instructor.	L+L 4.0 6.0 6.0
EEE202	Circuits and Devices	Introduction to circuits and devices. Component models, transient analysis, steady state analysis, Laplace transform, and active and passive filter networks.	Prerequisites: A grade of C or better in PHY116 or PHY131. Corequisites: MAT276 or permission of Instructor.	LEC 5.0 4.0 4.0 LAB 0.0 3.0 3.0

EEE220	Programming for Computer Engineering	Introduction to procedural programming (C/C++) and hardware description language (VHDL).	Prerequisites: A grade of C or better in ((EEE120 or CSC120) and CSC205) or permission of Instructor.	L+L 3.0 5.0 5.0
EEE230	Computer Organization and Assembly Language	Assembly language programming including input/output (I/O) programming and exception/interrupt handling. Register-level computer organization, I/O interfaces, assemblers, and linkers. Processor organization and design, data path, control, pipelining, and input/output. Memory organization with cache and virtual memory.	Prerequisites: A grade of C or better in [(CSC100 or CSC110) and CSC120 EEE120] or permission of Instructor.	L+L 4.0 5.0 5.0
EEG115	Biomedical Electronic Technology I	Review of basic principles of math and physics as applied to Biomedical Electronic technology and monitoring applications within the fields of electroneurodiagnostic technology and polysomnography technology.	Prerequisites: Admission to the Electroneurodiagnostic Technology program or Polysomnographic Technology program.	LEC 2.0 2.0 2.0
EEG116	Biomedical Electronic Technology II	Electronic concepts, electrical connections including grounding, and electrical and patient safety as applied to medical electronic technology and monitoring applications within the fields of electroneurodiagnostic technology and polysomnography technology.	Prerequisites: Admission to the Electroneurodiagnostics Technology program or the Polysomnographic Technology program.	LEC 3.0 3.0 3.0
EEG130	Introduction to EEG	Introduction to EEG (Electroneurodiagnostic) theory, with emphasis on instrumentation, testing protocol and major disorders for which EEG is diagnostically useful. Introduction and hands on experience with the 10/20 International Electrode Application System.	Admission to the Electroneurodiagnostics Program or admission to Polysomnographic Technology Program.	L+L 4.0 4.0 4.0

EEG140	Basic Electroneurodiagnostic Skills	Theory and clinical procedures germane to the electroneurodiagnostic (EEG) department. Stress on hospital orientation, job competency, professional growth, and interpersonal communications with staff and patients.	Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG140LL.	LEC 1.0 1.0 1.0
EEG140LL	Basic Electroneurodiagnostic Skills Laboratory	Practical application, and clinical procedures germane to the electroneurodiagnostic (EEG) department. Stress on hospital orientation, job competency, professional growth, and interpersonal communications with staff and patients.	Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG140.	LAB 1.0 3.0 3.0
EEG200	Clinical Rotation I	Clinical application of Electroneurodiagnostic (EEG) skills and knowledge acquired during required program classroom and lab courses. Full supervision of tests performed with progression to independent testing.	Admission to the Electroneurodiagnostics Program.	LAB 3.0 18.0 0.0
EEG201	Intermediate EEG	Expanded study of neurological and neurophysiological medicine. Discuss the studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma, congenital, and pediatric disorders. Extensive record review. Evaluate the normal and abnormal electrocardiogram (ECG) patterns related to electroencephalogram (EEG) testing.	Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG201LL.	LEC 3.0 3.0 3.0
EEG201LL	Intermediate EEG Laboratory	Expanded study and application of neurological and neurophysiological medicine. Studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma, congenital, and pediatric disorders. Extensive record review. Normal and abnormal electrocardiogram (ECG) patterns related to electroencephalogram (EEG) testing.	Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG201.	LAB 1.0 3.0 3.0



EEG205	Applied Evoked Potentials and Nerve Conduction Studies	Theoretical aspects of Evoked Potentials (EP), mainly Visual Evoked Response (VER), Brain Auditory Evoked Response (BAER), and Somatosensory Evoked Potential (SSEP) tests. EP instrumentation, recording techniques and data analysis of electrical activity of the nervous system elicited by using selected physical stimuli (evoked potentials) and concepts of signal averaging, (in accordance with the most recent American Clinical Neurophysiology Society (ACNS) guidelines on Evoked Potentials.)	Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG205LL.	LEC 1.0 1.0 1.0
EEG205LL	Applied Evoked Potentials and Nerve Conduction Studies Laboratory	Practical aspects of Evoked Potentials (EP), mainly Visual Evoked Response (VER), Brain Auditory Evoked Response (BAER), and Somatosensory Evoked Potential (SSEP) tests. EP instrumentation, recording techniques and data analysis of electrical activity of the nervous system elicited by using selected physical stimuli (evoked potentials) and concepts of signal averaging, (in accordance with the most recent American Clinical Neurophysiology Society (ACNS) guidelines on Evoked Potentials.)	Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG205.	LAB 1.0 3.0 3.0
EEG206	Advanced EEG	Comprehensive study of neurological and neurophysiological medicine. Studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma and congenital and pediatric disorders. Normal and abnormal pattern review. Case presentations. Board examination review.	Prerequisites: Admission to the Electroneurodiagnostic (END) program. Corequisites: EEG206LL.	LEC 1.0 1.0 1.0

EEG206LL	Advanced EEG Laboratory	Comprehensive advanced study and application of methods of neurological and neurophysiological medicine. Studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma and congenital and pediatric disorders. Normal and abnormal pattern review. Case presentations. Board examination review in the laboratory setting.	Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG206.	LAB 1.0 3.0 3.0
EEG207	Electroneurodiagnostic Record Review	Normal and abnormal pattern review for adults and pediatric patients, Nerve Conduction Velocity (NCV) pattern recognition and review, special procedures, Long Term Monitoring (LTM), and Intraoperative Monitoring (IOM) pattern recognition and review.	Admission to the Electroneurodiagnostics (END) Technology Program.	L+L 4.0 4.0 4.0
EEG210	Applied Neurophysiology	Introduction to central nervous system. Emphasis on conduction pathways, anatomy, and blood supply. Survey of neurotransmitters, pharmacology and current research.	Admission to the Electroneurodiagnostic Technology program or Polysomnographic Technology program.	LEC 3.0 3.0 3.0
EEG211	Clinical Rotation II	Clinical application of Electroneurodiagnostic (EEG) skills and knowledge acquired during didactic courses and clinical practicums. Full supervision of tests performed with progression to independent testing.	Admission to the Electroneurodiagnostics Program.	LAB 3.0 18.0 0.0
EEG220	Clinical Rotation III	Advanced clinical application of Electroneurodiagnostic (EEG) skills and knowledge acquired during didactic courses and clinical practicums. Full supervision of tests performed with progression to independent testing.	Admission to the Electroneurodiagnostics Program.	LAB 3.0 18.0 0.0
EEG282AA	Volunteerism for Electroneurodiagnostic Technology: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 1.0

EEP215	Early Childhood Health and Nutrition	Consideration of public health issues and safety procedures within early childhood settings. Overview of nutritional needs and issues of physical fitness and well-being in young children. Includes field experiences	Prerequisites: None.	LEC 3.0 3.0 3.0
EEP218	Early Learning: Health and Nutrition	Consideration of public health issues and safety procedures within early childhood settings. Overview of nutritional needs and issues of physical fitness and well-being in young children. Includes field experiences	Must hold an Elementary or Special Education provisional or standard teaching certificate.	LEC 1.0 1.0 1.0
EEP224	Child Development: Prenatal to Age Eight	Examination of process of physical, social, emotional, cognitive, language, and literacy development of typical and atypical young children; prenatal through age eight. Consideration of public health issues and safety procedures within early childhood settings. Overview of nutritional needs and issues of physical fitness and well-being in typical and atypical young children. Includes practical application and fieldwork experience.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EEP240	Early Childhood Foundations	Overview of early childhood education (birth to age eight) in American society, including current issues and responsibilities. Emphasis on issues of professionalism, ethics and program types. Opportunities for students to explore potential career paths. Includes field experience.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EEP242	Early Childhood Guidance and Management	Principles for guiding young children in early care and education environments. Exploration of guidance, management, and how the environment impacts the lives of typical and atypical young children. Includes observation of classrooms of children ages birth to age eight.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0

EEP244	Early Childhood Introduction to the Exceptional Young Child	Overview of the exceptional learner (birth to age eight), one who differs from the average or the norm, with emphasis on observation, techniques, characteristics, identification, types of programs, and work with families. Issues related to learning exceptionalities, sensory and communication disorders, social and emotional problems, physical and health related disorders, and giftedness. Includes field experience.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EEP246	Early Childhood Culture, Community, Family and the Child	Examines family, community, and cultural influences on development of the young child birth to third grade. Considers trends and threats to attachment, relationships and cultural identity. Includes social and emotional experiences and their impact on the developing brain.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EEP250	Early Childhood Language and Literacy Development	Overview of language development, emergent literacy, early literacy development, and appropriate early experiences with books, reading, and writing for typical and atypical children birth to age eight. Emphasis placed on reading and writing readiness, methods to enhance literacy development, and strategies for selecting and using children's books.	Baccalaureate Degree and formal acceptance to a Maricopa Community College state approved post-baccalaureate teacher preparation program or permission of Department or Division.	LEC 3.0 3.0 3.0
EEP255	Portfolio Development	Portfolio development, completion, and presentation. Self-assessment and educational short-term and long-term planning, professional development, writing and critical learning included.	Prerequisites: A grade of C or better in the completion of twelve (12) credit hours of EEP coursework and permission of Department or Division.	LEC 3.0 3.0 3.0

EEP260	Early Childhood Curriculum and Methods of Math - Birth to Age Eight	Overview and practical application of teaching math concepts to toddlers, preschoolers, and students Kindergarten through third grade (K-3). Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on overview and practical application of Early Learning Standards, Arizona Academic Standards (K-3), State Board of Education Professional Teaching Standards and National Council of Teachers of Mathematics Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate early childhood teacher preparation program.	LEC 3.0 3.0 3.0
EEP262	Early Childhood Curriculum and Methods of Science - Birth to Age Eight	Overview and practical application of teaching science concepts to toddlers, preschoolers, and students Kindergarten and third grade (K-3). Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on overview and practical application of Early Learning Standards, Arizona Academic Standards K-3, State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate early childhood teacher preparation program.	LEC 2.0 2.0 2.0
EEP264	Early Childhood Curriculum and Methods of Social Studies - Birth to Age Eight	Overview and practical application of teaching social studies to toddlers, preschoolers, and students K-3. Covers teaching strategies, learning environments, and teaching resources. Emphasis on overview and practical application of Early Learning Standards, Arizona Academic Standards Kindergarten through third grade (K-3).	Baccalaureate Degree and formal admission to a state approved post-baccalaureate early childhood teacher preparation program.	LEC 1.0 1.0 1.0

EEP266	Early Childhood Curriculum and Methods in Language Arts - Birth to Age Eight	Overview and practical application of teaching Language Arts concepts to toddlers, preschoolers, and students in Kindergarten through third grade (K-3). Covers communication skills of reading, writing, listening and speaking, interpreting visual messages and creating visual messages. Emphasis on overview and practical application of Early Learning Standards, Arizona Language Arts Standards (K-3), and State Board of Education Professional Teaching Standards	Baccalaureate Degree and formal admission to a state approved post-baccalaureate early childhood teacher preparation program.	LEC 1.0 1.0 1.0
EEP268	Early Childhood Curriculum and Methods in The Arts - Birth to Age Eight	Exploration of fine arts integration, birth to age 8, in early childhood settings. Focus on the impact on life-long learning and education goal achievement when curriculum includes fine arts. Arizona art standards of dance, visual, theater and music also covered	Baccalaureate Degree and formal admission to a post-baccalaureate early childhood teacher preparation program.	LEC 1.0 1.0 1.0
EEP276	Standards, Observation and Assessment of Typical and Atypical Behaviors Birth to Age Eight	Observation and assessment of typical and atypical behaviors, overview of standards, observation and assessment methodologies for typical and atypical young children birth to age eight. Includes ethics, referral and reporting procedures, and collaboration with families and other professionals.	Prerequisites: A grade of C or better in EEP260, EEP262, EEP264, EEP266, EEP268 and Baccalaureate Degree and formal admission to a state approved post-baccalaureate early childhood teacher preparation program.	LEC 3.0 3.0 3.0
EEP279	Early Childhood Elementary Methods: K-3	Overview and practical application of teaching elementary science, math and social studies. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Baccalaureate Degree and formal admission to a post-baccalaureate early childhood teacher preparation program.	LEC 4.0 4.0 4.0

EEP283	Introduction to the Exceptional Young Child and Early Learning Development	Teaching and early learning issues within a cognitive processes context. Covers emotion, memory, and recall as well as early brain development and its relationship to early learning. Includes overview of the exceptional learner (birth - age 5), one who differs from the average or the norm, with emphasis on observation, techniques, characteristics, identification, types of programs, and work with families. Includes field experience	Baccalaureate Degree from a regionally accredited institution.	LEC 4.0 4.0 4.0
EEP284	Early Educational Psychology: Child, Family, Community and Culture	Examines family, community and cultural influences on development of the young child. Considers trends and threats to attachment, relationships and cultural identity. Includes social and emotional experiences and their impact on the developing brain. Emphasis on the study and application of psychological principles, theories, and methodologies related to early childhood teaching and learning	Baccalaureate Degree from a regionally accredited institution of higher learning.	LEC 4.0 4.0 4.0
EEP285	Curriculum, Instruction, Standards, Observation and Assessment in Early Education	Considerations and evaluations of curriculum appropriate to the developmental characteristics of learners, birth through eight years. Includes how early childhood standards, philosophies, and program settings relate to the teaching, learning, and assessment process. Includes overview and practical application of Early Learning Standards, Arizona Academic Standards (K-3), observation techniques and assessment methodologies. Includes field experience.	Prerequisites: A grade of C or better in EEP283 and EEP284.	LEC 4.0 4.0 4.0

EEP288	Student Teaching Lab - Early Childhood	Supervised (K-3) student teacher practicum. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and a grade of C or better in (EDU220, EDU251, EEP240, EEP242, EEP244, EEP246 and EEP276) and permission of Department or Division.	LAB 4.0 5.0 0.0
EEP289	Internship: Early Childhood Infant, Toddler, Preschool	Supervised field experience with infants, toddlers and/or preschoolers in early care and education settings.	Baccalaureate Degree and formal admission to a state approved post-baccalaureate early childhood teacher preparation program and (EDU220 EDU251 EEP240 EEP242 EEP244 EEP246 and EEP276) and permission of Department or Division.	LEC 4.0 4.0 0.0
EEP290	Early Learning Environment: Foundations, Guidance and Management	Overview of early childhood education in American society, including current issues and responsibilities. Principles for guiding young children in early care and education environments. Exploration of guidance, management, and how the environment impacts the lives of young children. Includes observation of classrooms of children ages birth to age five. Includes field experience	Must hold an Elementary or Special Education provisional or standard teaching certificate.	LEC 4.0 4.0 4.0
EEP291	Early Learning: Development and the Exceptional Young Child	Teaching and early learning issues within a cognitive processes context. Covers emotion, memory, and recall as well as early brain development and its relationship to early learning. Includes overview of the exceptional learner (birth - age 5), one who differs from the average or the norm, with emphasis on observation, techniques, characteristics, identification, types of programs, and work with families. Includes field experience	Must hold an Elementary or Special Education provisional or standard teaching certificate.	LEC 4.0 4.0 4.0



EEP294AA	Internship: Early Childhood Preschool Level I	Work experience with preschoolers in early care and education settings. 80 hours of designated work per credit.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate early childhood teacher preparation program and (EDU220, EDU251, EEP240, EEP242, EEP244, EEP246, and EEP276) and permission of Department or Division.	LEC 2.0 2.0 2.0
EEP294AB	Internship: Early Childhood Preschool Level II	Work experience with preschoolers in early care and education settings. 80 hours of designated work per credit.	Prerequisites: A grade of C or better in EEP294AA and a minimum of 50% successful completion of all designated, required coursework.	LEC 2.0 2.0 2.0
EFE201	Family Engagement Specialist	Focus on the practical application for the Family Engagement Specialist role in K-12 schools. Includes responsibilities, skills, and relationship development as well as needs identification, goal setting, and professional development planning.	Prerequisites: None.	LEC 0.5 0.5 0.5
EFE202	Family Engagement Specialist: Parent Education	Focus on the practical application for the Family Engagement Specialist role in K-12 schools. Emphasis on parent engagement and current research.	Prerequisites: None.	L+L 0.5 0.5 0.5
EFE203	Family Engagement Specialist: Adolescent Behavior	Focus on the exploration of adolescent development as it applies to parenting and parent/K-12 school partnerships for the Family Engagement Specialist. Includes parenting styles and home structures.	Prerequisites: None.	L+L 0.5 0.5 0.5
EFE204	Family Engagement Specialist: Written Communication	Overview and practical application of written K-12 school communication for the Family Engagement Specialist. Includes systemic school methods of communication.	Prerequisites: None.	L+L 0.5 0.5 0.5

EFE205	Family Engagement Specialist: Cultural Diversity	Emphasis on liaison strategies for creating climates of inclusion for the Family Engagement Specialist. Includes support system development and creation of an individual K-12 student achievement plan.	Prerequisites: None.	L+L 0.5 0.5 0.5
EFE206	Family Engagement Specialist: Public Speaking,	Development of presentation skills for the Family Engagement Specialist. Includes strategies to assist in the delivery of effective workshop trainings and presentations for K-12 school and family learning.	Prerequisites: None.	L+L 0.5 0.5 0.5
EFE207	Family Engagement Specialist: Introduction to Education	Overview of federal legislation that influence K-12 school, family, and community partnerships. Focus on Title I legislation.	Prerequisites: None.	L+L 0.5 0.5 0.5
EFE208	Family Engagement Specialist: Leadership	Practical on-site experience for the Family Engagement Specialist in a K-12 school environment working with parents. Includes self-evaluation of skills and techniques necessary to engage parents in their role as child's first teacher. Overview of various levels of leadership also covered.	Prerequisites: None.	L+L 0.5 0.5 0.5
EFE232	Mild-Moderate Disabilities Student Teaching	Supervised student teaching. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Formal admission to an undergraduate teacher preparation program and a grade of C or better in (EDU209AF and EDU231) and permission of Department or Division.	LAB 8.0 5.0 0.0
EFE260	Student Teaching Lab K-12 - Art	Supervised student teacher practicum. Emphasis on the provision of K-12 art instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal admission to a state-approved post-baccalaureate teacher preparation program and permission of Department or Division.	LAB 12.0 9.0 0.0

EFE260AC	Intern Certificate Student Teaching Lab K-12 - Art Education I	Supervised student teacher practicum. Emphasis on the provision of K-12 art instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 3.0 9.0 0.0
EFE260AD	Intern Certificate Student Teaching Lab K-12 - Art Education II	Supervised student teacher practicum. Emphasis on the provision of K-12 art instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EFE260AC and a minimum of 25% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE260AE	Intern Certificate Student Teaching Lab K-12 - Art Education III	Supervised student teacher practicum. Emphasis on the provision of K-12 art instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EFE260AD and a minimum of 50% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE260AF	Intern Certificate Student Teaching Lab K-12 - Art Education IV	Supervised student teacher practicum. Emphasis on the provision of K-12 art instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program the partnering school district EFE260AE and a minimum of 75% successful completion of all designated required course work.	LAB 3.0 9.0 0.0

EFE261	Student Teaching Lab K-12 - Dance	Supervised student teacher practicum. Emphasis on the provision of K-12 dance instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal admission to a state-approved post-baccalaureate teacher preparation program and permission of Department or Division.	LAB 12.0 9.0 0.0
EFE261AC	Intern Certificate Student Teaching Lab K-12 - Dance Education I	Supervised student teacher practicum. Emphasis on the provision of K-12 dance instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 3.0 9.0 0.0
EFE261AD	Intern Certificate Student Teaching Lab K-12 - Dance Education II	Supervised student teacher practicum. Emphasis on the provision of K-12 dance instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE261AC and a minimum of 25% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE261AE	Intern Certificate Student Teaching Lab K-12 - Dance Education III	Supervised student teacher practicum. Emphasis on the provision of K-12 dance instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE261AD and a minimum of 50% successful completion of all designated required course work.	LAB 3.0 9.0 0.0

EFE261AF	Intern Certificate Student Teaching Lab K-12 - Dance Education IV	Supervised student teacher practicum. Emphasis on the provision of K-12 dance instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE261AE and a minimum of 75% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE262	Student Teaching Lab K-12 - Drama	Supervised student teacher practicum. Emphasis on the provision of K-12 drama instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal admission to a state-approved post-baccalaureate teacher preparation program and permission of Department or Division.	LAB 12.0 9.0 0.0
EFE262AC	Intern Certificate Student Teaching Lab K-12 - Drama Education I	Supervised student teacher practicum. Emphasis on the provision of K-12 drama instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 3.0 9.0 0.0
EFE262AD	Intern Certificate Student Teaching Lab K-12 - Drama Education II	Supervised student teacher practicum. Emphasis on the provision of K-12 drama instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE262AC and a minimum of 25% successful completion of all designated required course work.	LAB 3.0 9.0 0.0

EFE262AE	Intern Certificate Student Teaching Lab K-12 - Drama Education III	Supervised student teacher practicum. Emphasis on the provision of K-12 drama instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE262AD and a minimum of 50% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE262AF	Intern Certificate Student Teaching Lab K-12 - Drama Education IV	Supervised student teacher practicum. Emphasis on the provision of K-12 drama instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE262AE and a minimum of 75% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE263	Student Teaching Lab K-12 - Music	Supervised student teacher practicum. Emphasis on the provision of K-12 music instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal admission to a state-approved post-baccalaureate teacher preparation program and permission of Department or Division.	LAB 12.0 9.0 0.0
EFE263AC	Intern Certificate Student Teaching Lab K-12 - Music Education I	Supervised student teacher practicum. Emphasis on the provision of K-12 music instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 3.0 9.0 0.0

EFE263AD	Intern Certificate Student Teaching Lab K-12 - Music Education II	Supervised student teacher practicum. Emphasis on the provision of K-12 music instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE263AC and a minimum of 25% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE263AE	Intern Certificate Student Teaching Lab K-12 - Music Education III	Supervised student teacher practicum. Emphasis on the provision of K-12 music instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE263AD and a minimum of 50% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE263AF	Intern Certificate Student Teaching Lab K-12 - Music Education IV	Supervised student teacher practicum. Emphasis on the provision of K-12 music instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Baccalaureate Degree and formal acceptance of a specified teacher prep two year program plan by an Arizona Department of Education approved college program and the partnering school district EFE263AE and a minimum of 75% successful completion of all designated required course work.	LAB 3.0 9.0 0.0
EFE291	Special Education: Mild-Moderate Student Teaching	Supervised student teaching. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and (a grade of C or better in EDU223AF and EDU293) and permission of Department or Division.	LAB 8.0 5.0 0.0

EFE291AC	Special Education: Mild-Moderate Student Teaching I	Supervised student teaching. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and (a grade of C or better in EDU223AF and EDU293) and permission of Department or Division.	LAB 2.0 6.0 0.0
EFE291AD	Special Education: Mild-Moderate Student Teaching II	Supervised student teaching. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and (a grade of C or better in EDU223AF and EDU293) and permission of Department or Division.	LAB 2.0 6.0 0.0
EFE291AE	Special Education: Mild-Moderate Student Teaching III	Supervised student teaching. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and (a grade of C or better in EDU223AF and EDU293) and permission of Department or Division.	LAB 2.0 6.0 0.0
EFE291AF	Special Education: Mild-Moderate Student Teaching IV	Supervised student teaching. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal admission to a state approved post-baccalaureate teacher preparation program and (a grade of C or better in EDU223AF and EDU293) and permission of Department or Division.	LAB 2.0 6.0 0.0



EFE297AA	Intern Certificate Student Teaching Lab - K-3 Part A	Supervised student teacher practicum in K-3 grade classroom. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal acceptance of a teacher prep program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 2.0 6.0 0.0
EFE297AB	Intern Certificate Student Teaching Lab - K-3 Part B	Supervised student teacher practicum in K-3 grade classroom. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal acceptance of a teacher prep plan by an Arizona Department of Education approved college program, the partnering school district, EFE297AA, and a minimum of 50% successful completion of course work.	LAB 2.0 6.0 0.0
EFE297AC	Intern Certificate Student Teaching Lab - K-3 Level I	Supervised student teacher practicum in K-3 grade classroom. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal acceptance of a teacher prep program plan by an Arizona Department of Education approved college program and the partnering school district.	LAB 1.0 3.0 0.0
EFE297AD	Intern Certificate Student Teaching Lab - K-3 Level II	Supervised student teacher practicum in K-3 grade classroom. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal acceptance of a teacher prep plan by an Arizona Department of Education approved college program, the partnering school district, EFE297AC, and a minimum of 25% successful completion of course work.	LAB 1.0 3.0 0.0

EFE297AE	Intern Certificate Student Teaching Lab - K-3 Level III	Supervised student teacher practicum in K-3 grade classroom. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal acceptance of a teacher prep plan by an Arizona Department of Education approved college program, the partnering school district, EFE297AD, and a minimum of 50% successful completion of course work.	LAB 1.0 3.0 0.0
EFE297AF	Intern Certificate Student Teaching Lab - K-3 Level IV	Supervised student teacher practicum in K-3 grade classroom. Emphasis on the provision of instruction to learners. Covers lesson plan development, classroom procedures, classroom management, and educator professionalism. Includes learner preparation, learner engagement, and learner outcome awareness.	Prerequisites: Baccalaureate Degree and formal acceptance of a teacher prep plan by an Arizona Department of Education approved college program, the partnering school district, EFE297AE, and a minimum of 75% successful completion of course work.	LAB 1.0 3.0 0.0
ELA111	Construction Electricity I	Introduction to the electrical construction trade incorporating safety awareness, introductory concepts in electrical theory, math review, solving simple equations, ratios, percentages and proportions. Study of the National Electrical code (NEC), practical use of materials and tools of the electrical construction trade. Basic splicing, anchoring, and fusing procedures; basic conduit bending calculations and installations, introduction to blueprint reading for electricians, rigging and lifting techniques.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ELA112	Construction Electricity II	Introduction to the fundamentals electricity, basic direct current (DC) theory through advanced DC theory, advanced conduit fabrication, bending applications and calculations. Practical applications for wiring devices and conduit bending.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

ELA113	Introduction to National Electrical Code	Development, content, structure, and definitions in the National Electrical Code (NEC). Application of the NEC for proper and safe electrical installations and wiring methods.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
ELA115	Electrical Conduit Bending	Type of conduit benders and bends. Conduit bending procedures and use of bends in a conduit system. Includes hands-on bending practice	Registered apprentice status or permission of the apprenticeship coordinator.	L+L 1.0 1.0 1.0
ELA116	OSHA-Electrician Safety and Inspection	Occupational Safety and Health Administration (OSHA) safety and health standards for the electrical industry. Includes hazardous situations and abatement techniques. OSHA training and inspection procedures	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
ELA123	Construction Electricity III	American labor history, parliamentary procedures. Electrical theory of alternating current systems pertaining to inductance, and capacitance; use of alternating current (AC) and direct current (DC) meters, rectifiers and capacitors.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ELA124	Construction Electricity IV	Transformers principles and applications in regards to use, connection, installation and safety related to transformer principles and applications including requirements specified by the National Electrical Code (NEC). Filters and power quality for electrical systems, direct current generation, application of test instruments for power quality, instrumentation, insulation testing and voice-data-video. Blueprint reading for electricians, commercial drawings, specifications, and schedules.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

ELA125	National Electric Code I	National Electrical Code (NEC) related to branch circuits, feeders, services, devices, conductors, raceways and cable assembles. Electrical safety incorporating Occupational Safety and Health Association (OSHA) requirements and National Fire Protection Association (NFPA) 70E guidelines.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
ELA235	Advanced Construction Electricity I	Advanced industrial blueprint reading, lighting design, healthcare systems including the National Electrical Code (NEC) requirements. Motors and motor controls.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ELA236	Advanced Construction Electricity II	Motor Controls, types of motor controls, components, motor control circuitry, and installations of motor control components and circuitry: Instrumentation and process controls, theory of process controls, installation, calibration, and troubleshooting of instruments and control circuitry.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ELA238	National Electric Code II	National Electrical Code requirements for Grounding and bonding electrical installations. Continued study of electrical safety incorporating Occupational Safety and Health Association (OSHA) requirements and National Fire Protection Association (NFPA) 70E guidelines.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	LAB 3.0 3.0 3.0
ELA246	National Electric Code III	National Electrical Code (NEC) requirements for special occupancies, conditions, and equipment. Calculations for conductor ampacities, conductor fill specific branch circuits. Installation and NEC requirements for Photovoltaic (PV) Systems.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	LAB 3.0 3.0 3.0

ELA247	Advanced Construction Electricity III	Leadership and motivation techniques for the electrical industry, digital electronics, Boolean algebra and logic gates. Power quality for electrical systems, distributed generation, information technologies sites, uninterruptable power supplies, and fuel cells. Torque theory and applications. National Electrical Code (NEC) related to over current protective devices (OCPDs), types, sizing, and ratings. Tape rules, fault current calculations and ratings, motor branch circuits and circuit/transformer protection.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ELA248	Advanced Construction Electricity IV	Introduction to fire alarm systems, requirements, devices, wiring methods and applicable codes; fire alarm blueprints and specifications. Cables, cabling systems, terminations, grounding and bonding. Telecommunications Industry Association/Electronic Industries Alliance (TIA/EIA) standards. Hazardous location introduction and history, area classification, protection techniques, equipment, wiring requirements, and special occupancies. National Electrical Code (NEC) updates, installation of emergency and standby systems over 600 volts, remote-control, signaling, and power-limited circuit, specific raceways and cable tray systems, in-floor, multi-outlet assemblies, changes and update to the NEC.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
ELA251AB	Residential Electrical Code	National Electrical Code regulations as they apply to residential electrical installations. Emphasis upon safe electrical procedures to minimize the chance of fires and explosions	Approval by the Phoenix Electrical Joint Apprenticeship and Training Committee.	LEC 1.0 1.0 1.0

ELA252	Advanced Construction Electricity V	International Brotherhood of Electrical Workers (IBEW) programs. Sexual harassment sensitivity training. Fire alarm systems, installations, control processes, telephone installations, telecommunication networks and high voltage testing.	Prerequisites: (Registered apprentice status and a grade of C or better in ELA248) or permission of the apprenticeship coordinator.	L+L 4.0 6.0 6.0
ELA253	Advanced Construction Electricity VI	Heating, ventilation and air conditioning. Locating cable faults, installing and troubleshooting alarm systems. Programmable Logic Controllers	Prerequisites: (Registered apprentice status and a grade of C or better in ELA252) or permission of the apprenticeship coordinator.	L+L 4.0 6.0 6.0
ELA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ELA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ELA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ELC103	Electrical/Mechanical Calculations	Fundamental calculations in arithmetic, algebra, trigonometry, descriptive geometry, economics, and probability. Application of theories and formulas to solve design, installation, maintenance, and troubleshooting problems for industrial, commercial, and residential electrical and mechanical systems.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELC105	Electricity for Industry	Electricity related to industrial applications. Operation of and safety protocols for the use of electrical meters. Electrical loads calculations and evaluation of electro-mechanical power sources. Single-phase motors, motor resistance and motor terminals. Function of electro-magnetic solenoids and transformers. National Electric Code.	Prerequisites: None. Corequisites: ELC/FAC/HVA105LL or permission of Instructor.	LEC 3.0 3.0 3.0
ELC105LL	Electricity for Industry Lab	Diagramming and assembling series circuits, parallel circuits and wiring relays, thermostats, switches and lights. Electrical readings on compressors. Emphasis on safety.	Prerequisites: None. Corequisites: ELC/FAC/HVA105 or permission of Instructor.	LAB 1.0 3.0 3.0

ELC115	Motors, Controls and Wiring Diagrams	Principles of three-phase motors. Wye and Delta wiring. Calculation of motor current draw. Sequence of operation, wiring diagram and electrical components associated with industrial equipment. Procedures for evaluating electrical problems. Safety stressed.	Prerequisites: A grade of C or better in ELC/FAC/HVA105 or permission of department or ELC/FAC/HVA105LL or permission of department. Corequisites: ELC/FAC115LL or permission of Department or Division.	LEC 3.0 3.0 3.0
ELC115LL	Motors, Controls and Wiring Diagrams Lab	Drawing wiring diagrams, wiring systems and checking electrical circuits. Troubleshooting electrical problems of three-phase motors and controls. Safety stressed.	Prerequisites: A grade of C or better in ELC/FAC/HVA105 or permission of department or ELC/FAC/HVA105LL or permission of department. Corequisites: ELC/FAC115 or permission of Department or Division.	LAB 1.0 3.0 3.0
ELC119	Concepts of Electricity and Electronics	Introduction to theory and principles of electric circuits, magnetism and electromagnetism including basic motors, transformers and generators. Use of basic measuring instruments. Overview of Ohm's and Kirchhoff's law and electronics in the modern world.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELC120	Solid State Fundamentals	Theory of operation of semi-conductor devices, component and system construction, operation, installation, and service. Specific and practical applications in relations to temperature, light, speed and pressure control as used in industry today. Includes amplifiers, power supplies, integrated circuits, alternating current (AC) and direct current (DC) drives, fiber optics, and safety.	Prerequisites: None.	LEC 3.0 3.0 3.0



ELC123	Residential Electrical Wiring and Codes	Analysis and interpretation of residential drawings, local codes and specific sections of the National Electrical Code. Including needed materials derived from plans and specifications and the proper procedures for wiring a residence and other special locations. Areas of focus include circuits, conductors, switches, outlets, heating, security, and communication systems.	Prerequisites: None.	L+L 3.0 3.0 3.0
ELC124	Industrial Electrical Wiring and Codes	Industrial electrical power techniques of low, medium and high voltage systems. Selection of electrical distribution components, single and three phase systems, one-line diagrams, motors, transformers, protective devices, power factor, demand factor, conductor selection, system planning, grounding and energy management.	Prerequisites: A grade of C or better in ELC123 or permission of Instructor or admission to Electric League of Arizona program.	LEC 3.0 3.0 3.0
ELC125	Commercial Electrical Wiring and Codes	Commercial electrical power distribution techniques of low voltage (under 600 volt) systems. Selection of electrical distribution components, single and three systems, one-line diagrams and conductor selection. System grounding, planning and over current protection.	Prerequisites: A grade of C or better in ELC123 or permission of Instructor or admission to Electric League of Arizona program.	L+L 3.0 3.0 3.0
ELC144	Basic Automated Systems Using Programmable Controllers	Principles of automated control systems. Principles and application of programmable controllers, control functions, hardware, logic, programming, documentation, troubleshooting, start-up, maintenance and operation. Commercial and industrial control applications. Introduction to commercial programmable controllers.	Prerequisites: A grade of C or better in ELC120 or permission of Instructor or admission to Electric League of Arizona program.	L+L 3.0 3.0 3.0

ELC160	Applied Electrical Codes I	Analysis of diagrams and application of current code interpretations. Includes local exceptions and practices. Review of the National Electrical Code (NEC) related to definitions, installations, wiring and protection, wiring methods, materials, and equipment.	Prerequisites: A grade of C or better in ELC119 or permission of Instructor.	LEC 3.0 3.0 3.0
ELC161	Applied Electrical Codes II	National Electrical Code (NEC) requirements for hazardous locations, special use and occupancies. Commercial, industrial and service locations. Fiber optics, communications and other state-of-the-art applications. Local inspection practices and requirements.	Prerequisites: A grade of C or better in ELC160 or permission of Instructor.	LEC 3.0 3.0 3.0
ELC162	Electrical Codes and Inspection I	Analysis of diagrams and application of current code interpretations. Includes local exceptions and practices	Prerequisites: A grade of C or better in (ELE100 and ELE101) or permission of Instructor.	LEC 3.0 3.0 3.0
ELC164	Grounding and Bonding	Electrical theory and calculation of electrical current. Grounding and bonding terminology including National Electric Code (NEC) Articles 250. Interpreting code requirements for grounding and bonding. Code requirements for field installation and sizing.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELC207	AC Electrical Systems	Alternating Current (AC) electrical theory, terminology, and application. The course includes information on AC circuits, motors, and generators; AC power and reactive components; voltage regulators; transformers; and electrical test instruments and measuring devices. Provides students with a foundation for understanding the basic operation and maintenance of various types of industrial facility electrical systems.	Prerequisites: A grade of C or better in ELC119 or permission of Department or Division.	LEC 3.0 3.0 3.0

ELC210	AC Machinery and DC Machinery	Principles and operation of AC (Alternating current) and DC (direct current) motors, generators, and alternators. Includes single-phase motors along with induction, synchronous, and wound-rotor types of three-phase motors. DC motors including shunt-field, series field, wound rotor, permanent magnet, stepper and brushless types.	Prerequisites: A grade of C or better in ELC119 or permission of Instructor or admission to Electric League of Arizona program.	LEC 3.0 3.0 3.0
ELC217	Motor Controls	Electrical symbols, line diagrams and logic. Contacts and starters, control devices, reversing circuits and power distribution systems. Magnetism and magnetic solenoids, reduced voltage starters, and circuits. Hand tools and safety procedures.	Prerequisites: A grade of C or better in ELC119 or permission of Department or Division or admission to Electric League of Arizona program.	L+L 3.0 3.0 3.0
ELC218	Variable Frequency Drives	Principles and operation of frequency controlled AC (Alternating current) motor drives, including current source inverters (CSI), variable voltage inverters (VVI) and pulse width modulated inverters (PWM). Heating, ventilation and air conditioning (HVAC) applications along with energy savings, motor pump sizing and torque load calculations.	Prerequisites: A grade of C or better in ELC120 or permission of Instructor or admission to Electric League of Arizona program.	LEC 3.0 3.0 3.0
ELC219	Programmable Controllers	Principles and applications of programmable logic controls (PLC's). Numbering systems, control strategies, and ladder logic. Basic machine functions and operations to include programming, troubleshooting and maintenance. Application of PLC programming, operations and troubleshooting skills.	Prerequisites: A grade of C or better in ELC/FAC/HVA105 and ELC/FAC115 and ELC119 or permission of Instructor.	L+L 4.0 6.0 6.0
ELC227	PLCs and Motor Drives	Advanced applications of industrial control circuits. Topics include the installation, operation, maintenance, and troubleshooting of industrial control circuits using programmable logic controllers (PLCs), AC motor drives, and DC motor drives.	Prerequisites: A grade of C or better in ELC119 or permission of Department or Division.	LEC 3.0 3.0 3.0

ELC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ELC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
ELC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 20.0 0.0

ELC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 20.0 0.0
ELC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ELC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ELC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ELE100	Concepts of Electricity and Electronics	Principles of electric circuits, magnetism and electromagnetism including basic motors and generators. Use of basic measuring instruments. Includes an overview of electronics in the modern world	Prerequisites: None.	L+L 3.0 4.0 4.0
ELE101	Beginning Algebra for Technology	Basic axioms of algebra, linear equations in one or two variables, operations on polynomials, rational expressions, simultaneous solutions of linear equations, laws of exponents.	Prerequisites: Score of 19 on Technical Mathematics placement test or a Grade of C or better in GTC107 or MAT082 or equivalent.	LEC 3.0 3.0 3.0
ELE105	Algebra-Trigonometry for Technology	Topics from college algebra and trigonometry essential to the study of electronics; polynomials, exponential and logarithmic functions, complex numbers, and trigonometric functions and identities.	Prerequisites: A grade of C or better in either ELE101 or MAT090 or MAT091 or MAT092 or equivalent or score of 16 on Technical Algebra placement test.	LEC 5.0 5.0 5.0
ELE111	Circuit Analysis I	Direct current (DC) and alternating current (AC) electric circuits. Ohm's law, Kirchoff's laws, series, parallel and series-parallel circuits, fundamentals of inductance and capacitance, and the transient behavior of circuits containing resistance and capacitance or resistance and inductance.	Prerequisites: None. Corequisites: MAT120, or MAT121, or MAT122, or equivalent.	L+L 4.0 6.0 6.0
ELE112	Circuit Analysis II	Alternating current (AC) and direct current (DC) circuits containing resistance and reactance. Detailed coverage of AC/DC circuit parameters, including theorems, impedance matching, and resonance	Prerequisites: A grade of C or better in ELE111.	L+L 4.0 6.0 6.0

ELE121	Solid-State Devices and Circuits I	Theory of operation of semiconductor diodes and transistors. Bipolar junction transistor biasing and load-line analysis. Alternating Current (AC) equivalent circuits applied to small signal amplifiers. Characteristics of large signal and power amplifiers	Prerequisites: A grade of C or better in ELE111.	L+L 4.0 6.0 6.0
ELE131	Digital Logic and Circuits	Number systems, binary arithmetic, and Boolean algebra, combinational and sequential logic circuits, and memory elements.	Prerequisites: None.	L+L 3.0 6.0 6.0
ELE161	Custom Electric Guitar Fabrication	Offered to guitar or bass players, artists, woodworkers or anyone who wants to learn the specialized skills of a luthier or the art of electric guitar crafting, maintenance, and setup. Fabricate and integrate a complete guitar neck and body, and finish with a combination of paint, stain, and clear coats.	Prerequisites: None.	L+L 3.0 4.0 4.0
ELE162	Custom Acoustic Guitar Fabrication	Offered to guitar players, artists, woodworkers or anyone who wants to learn the specialized skills of a luthier or the art of acoustic guitar crafting, maintenance, and setup. Fabricate and integrate a complete guitar neck and body, and finish with a combination of paint, stain, and clear coats.	Prerequisites: None.	L+L 3.0 4.0 4.0
ELE173	Fabrication Techniques	Introduction to electronic assembly safety practices and procedures, hand tool, and measuring devices. Includes basic and special assembly tools, fastener installation and removal tools, precision measuring tools, fabrication tools, torque measuring instruments, Electrostatic Discharge (ESD) awareness and procedures, basic soldering/desoldering, prototype and troubleshooting.	Prerequisites: None.	L+L 3.0 6.0 6.0

ELE181	Computer Programming for Technology	Elementary computer programming techniques. Hands-on computer usage	Prerequisites: None.	L+L 3.0 5.0 5.0
ELE222	Solid-State Devices and Circuits II	Theory and application of differential and operational amplifiers. Power supplies and regulators; special devices and circuits.	Prerequisites: A grade of C or better in ELE112 and ELE121.	L+L 4.0 6.0 6.0
ELE241	Microprocessor Concepts	Architectures of selected microprocessors. Presentation of machine and assembly language programming	Prerequisites: A grade of C or better in ELE131.	L+L 4.0 6.0 6.0
ELE243	Microprocessor Applications	Presents the microprocessor in computing and control applications. System hardware and software used to control the microprocessor system to perform input/output operations	Prerequisites: A grade of C or better in ELE241 or ELT241.	L+L 3.0 5.0 5.0
ELE245	Advanced Microprocessors and Systems	Microprocessors and systems, in the expanding Internet of Things. Legacy, current, and future wired and wireless interfaces and protocols. Connecting modern software environments to real-world electronic hardware.	Prerequisites: A grade of C or better in (ELE131 and ELE181), or ELE241, or permission of Instructor.	L+L 3.0 3.0 3.0
ELE251	Electronic Measurements	Application and operation of common electronic and electrical test instruments including: oscilloscopes, analog and digital multimeters, digital counters and signal sources. Transducers, amplifiers, and filters, as they apply to instrumentation systems. Laboratory reports and documentation are emphasized	Prerequisites: A grade of C or better in ELE121.	L+L 3.0 5.0 5.0
ELE261	Communication Systems	Communication systems. Amplitude modulation (AM), frequency modulation (FM), single-sideband (SSB), radio receivers, pulse systems, radiation, antennas and wave propagation.	Prerequisites: A grade of C or better in ELE121 and ELE131. Corequisites: ELE222.	L+L 4.0 6.0 6.0



ELE263	Digital Data Communications	Overview of modern telephone system. Telephone switching and modulation techniques. Familiarization with AM(amplitude modulation) and FM(frequency modulation) circuits. Operation of asynchronous and synchronous modems	Prerequisites: A grade of C or better in ELE121 and ELE241.	L+L 4.0 6.0 6.0
ELN100	Foundations of eLearning Design for K-12	Overview of eLearning design foundations for K-12 environment. Includes the history, characteristics, and theories of eLearning. Principles and models of instruction design as well as eLearning technologies and course management systems covered.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN101	eLearning Design Level I	An introduction to eLearning Design theory (the Assess, Design, Develop, Implement and Evaluate (ADDIE) Instructional Design model). Emphasis on purpose and process of analysis, design, development, implementation, and evaluation of eLearning projects	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN102	eLearning Media Level I	An introduction to eLearning media. Emphasis on the pedagogy/andragogy of current media and the tools, function, and purpose for e-Learning. The instructional use of video, audio, graphics, learning management, animation, presentation, and communication included.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN103	K-12 eLearning Technology and Media	Overview of technology and media used in K-12 eLearning environments. Covers types of media, learning settings, instructional strategies, and visual principles as well as current and future trends. Usage of audio and video technology included.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0

ELN104	Web 2.0 in eLearning	Procedures for using Web 2.0 in eLearning course design. Includes Web 2.0 research and learning design as well as media selection. Also covers use and challenges of various learner tools in addition to issues concerning learners, teachers, and organizations.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN105	Classroom Management in K-12 eLearning	Procedures for management of the eLearning classroom. Emphasis on creating a supportive and engaging active learning environment for the distance learner. Covers characteristics of the distance learning student as well as procedures for creating a collaborative, integrated, and supportive learning environment.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN106	Discipline and Behavior in K-12 eLearning	Overview of discipline and behavior issues in the K-12 eLearning environment. Includes classroom discipline theories and approaches to discipline. Also covers formalization of a personal system of discipline.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN107	Parent Communication and Involvement in K-12 eLearning	Procedures for involving parents in K-12 eLearning. Includes law and public policy relating to compliance, student advocacy, and parental rights. Also covers parent-teacher communication issues as well as online education family involvement models.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN108	Legal Issues in K-12 eLearning	Overview of legal issues and regulations in an online K-12 classroom. Intellectual property, privacy, Internet security, and educational institution policies covered. Includes the Family Educational Rights and Privacy Act (FERPA) and Individuals with Disabilities Act (IDEA)	Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0

ELN109	Engaging K-12 eLearners	Overview of engaging K-12 learners in an eLearning environment. Phases of eLearning and eLearning activities covered. Tool usage and assessment emphasized.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN110	Introduction to eLearning Environments	An introduction to eLearning environments, including learning management systems, online collaboration, synchronous communication, and asynchronous communication. Use of industry standard tools to create interactive learning experiences emphasized.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN111	K-12 eLearning Environments	Introduction to eLearning environments for K-12 teachers. Synchronous and asynchronous environments as well as online collaboration covered with an emphasis on considerations for K-12 students. Course management systems for K-12 learning environments also included.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN112	Methods of Building and Facilitating eLearning: 9-12	Methods for building and facilitating eLearning for 9-12 students. Includes course design principles and methods as well as copyright and intellectual property issues. Also covers student activities facilitation, assessment, and online classroom management concerns.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN113	Methods of Building and Facilitating eLearning: K-8	Methods for building and facilitating eLearning for K-8 students. Includes course design principles and methods as well as copyright and intellectual property issues. Also covers student activities facilitation, assessment, and online classroom management concerns. K-8 learner special considerations also included.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0

ELN114	Building Community with Online Learners	Procedures for building a community in an eLearning environment. Includes personalization of learning, collaborative learning, and transformative learning. Foundations for building an online community and technology usage also covered	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN115	eLearning for Multiple Generations	Overview of eLearning for existing, new, and emerging generations. Covers engagement, interaction, and collaboration of eLearners from various generations. Impact of eLearning on various generations as well as usage of games, activities, rewards, and feedback included.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN116	Mobile Devices as Learning Tools	Usage of electronic mobile devices in learning. Covers concept of mobile learning, types of mobile devices, and procedures for incorporating devices into the classroom. Accessibility, usability, student experience, and best practices also included	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN117	Interactions in eLearning	Overview of student interactions in an eLearning environment. Theoretical perspective of interactivity and interactive learning and encounter theory covered. Interactive learning activities and practice, including games, simulations, the Educational Semantic Web, peer learning, and online discussions emphasized	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN118	Motivation and the Online Learner	Overview of motivation in the online classroom. Includes motivation theories, self-esteem vs. self-efficacy, and learner expectations as well as motivational problems and benefits of a motivational online learning environment. Facilitator's role, grouping of students, and assessment creation as motivation tools also covered	Prerequisites: None.	LEC 3.0 3.0 3.0

ELN120	Organizing and Evaluating eLearning Projects	An introduction to eLearning project organization and evaluation. Emphasis on using current tools to promote teamwork, budgets, and multiple projects in a team-based environment. Evaluation of project outcomes also included.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN121	Evaluating K-12 eLearning	Procedures for evaluating K-12 eLearning. Includes procedures for creating and integrating various types of student and course evaluation into the eLearning process.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN122	K-12 eLearning Assessment Creation	Procedures for creating assessments for K-12 eLearning environment. Emphasis on importance of and plans to measure learning as well as implications for K-12 eLearners. Covers learning outcomes, performance objectives, types of assessments. Online student interaction and collaboration included.	Prerequisites: Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
ELN123	Assessment of Online Learning	Assessment of learning in an online learning environment. Covers learning outcome categories, validity, and reliability. Includes procedures for assessment interpretation, usage, creation, and management.	Prerequisites: None.	LEC 3.0 3.0 3.0
ELN202	eLearning Media Level II	Design of instructional media. Includes prototyping, interface design, storyboarding, scripting, and working with a production team. Emphasis on relating instructional media to learning outcomes. Design of instructional video, audio, graphics, learning management systems, animation, presentation, and communication also covered.	Prerequisites: A grade of C or better in ELN102.	L+L 3.0 4.0 4.0

ELN204	eLearning Design Level II	Application of the Assess, Design, Develop, Implement and Evaluate (ADDIE) instructional design model to eLearning design. Includes instructional analysis as well as the design, development, implementation, and evaluation of an eLearning project.	Prerequisites: A grade of C or better in ELN101 and ELN202.	LAB 3.0 6.0 6.0
ELN290AA	eLearning Design Internship	eLearning design work experience in industry or education. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 1.0
ELN290AB	eLearning Design Internship	eLearning design work experience in industry or education. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 2.0 2.0 2.0
ELN290AC	eLearning Design Internship	eLearning design work experience in industry or education. Eighty (80) hours of designated work per credit	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 3.0
ELR110	Electrical Basics	Gain an understanding of electrical trade, safety and electrical circuits, electrical theory, voltage and current laws, and circuit analysis. Learn electrical codes and device boxes.	Prerequisites: None.	157
ELR111	Electrical Installations	Learn conduit bending fundamentals, raceway and fittings, applications of conductors and cables, electrical drawings, services, and test equipment.	Prerequisites: None.	111
ELR131	Electrical Systems	Electricity related to residential and light commercial applications, to include common electrical components, alternating current (AC) and direct current (DC) circuits, and electrical safety. Provides an introduction to reading, interpreting, and creating wiring diagrams and the application of electrical power. Operation and use of specific meters, tools, and an introduction to the National Electrical Code (NEC).	Prerequisites: None.	81

ELR132	Distribution Panels, Wiring, and Circuit Protection in Electrical Systems	Course covers construction drawings and code related to conductors and cables (types, ratings), residential and commercial applications, wire sizes, utilities, meters, disconnects, breakers, grounding and bonding, rough-in wiring and circuit safety protection.	Prerequisites: None.	81
ELR133	Conduit, Raceways, and Termination in Electrical Systems	Course covers termination and the implementation of electricity in a facility. Considers topics related to box capacities, raceways, conduit sizes, termination practices, wire trays, and finish wiring.	Prerequisites: None.	120
ELR210	Electrical Level 2	Learn about alternating current (AC) circuits, motors and lighting, conduit bending, pull and junction boxes and cable trays.	Prerequisites: None.	119
ELR211	Electrical Applications Level 2	Build an understanding of conductor terminations, splices, grounding and bonding, circuit breakers, fuses and control systems, with an introduction to solar.	Prerequisites: None.	119
ELR234	Electric Power Distribution	Course covers the theory and applications of distribution of power from utilities to residential and commercial sites, including transformers and commercial electrical distribution equipment and services. Also includes safety, codes, and interpretation of construction drawings and specifications.	Prerequisites: None.	81
ELR235	Motors: Theory and Application	Course covers motor and motor controls in electricity. Explains how to select and install relays and troubleshoot control circuits. Distinctions between alternating current (AC) and direct current (DC) motors, motor speed control, design and operation characteristics, and connections and terminal markings	Prerequisites: None.	120

ELR236	Industrial Wiring Applications	Course covers a broad variety of electrical wiring applications, including healthcare facility, heating, ventilation, and air conditioning (HVAC), standby, emergency, and fire alarm systems.	Prerequisites: None.	81
ELT100	Survey of Electronics	An introduction to the field of electronics for those who may not intend to specialize in electronics. Essentially nonmathematical in nature; includes familiarization with a wide range of electronic components. Application to electronic systems, such as radio transmitters and receivers - both AM(amplitude modulation) and FM(frequency modulation), television transmitters and receivers, logic control, and computers. Application also to automotive electronics	Prerequisites: None.	LEC 3.0 3.0 3.0
ELT101	Mathematics for Electronics I	Basic principles of Algebra with applications to the analysis of electronic circuits. Emphasis on the use of the calculator for conversions and DC(direct current) circuit problems	Prerequisites: None.	LEC 3.0 3.0 3.0
ELT102	Mathematics for Electronics II	The study of simultaneous equations, quadratic equations, trigonometric relationships, periodic functions and logarithms as applied to AC(alternating current) circuit analysis. Application of the scientific calculator to technical problem solving in electronics	Prerequisites: A grade of C or better in ELT101 or equivalent.	LEC 3.0 3.0 3.0
ELT113	Basic Electronics	Direct and alternating current electrical circuits. Theory and practical lab experience, using the appropriate test equipment and computer solutions. Ohm's Law, Kirchhoff's Laws, and various network theorems applied to the study and analysis of series, parallel, and series-parallel circuit configurations. Includes complex algebra, impedance, frequency response, and resonance.	Prerequisites: A grade of C or better in ELT102 or Corequisites: ELT102 or equivalent.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0



ELT131	Digital and Logic Circuits	Digital concepts and fundamentals, number systems and codes, Boolean algebra and combinational logic, logic reduction techniques, and logic hardware. Memories and programmable logic arrays. Hands-on hardware and computer-aided logic design experiments.	Prerequisites: A grade of C or better in ELT113, or ELC119, or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
ELT195	Solid State Electronics	Characteristics and use of solid state devices in practical circuit applications. Circuit analysis techniques and computer simulations. Includes, diodes, transistors, four-layer devices, operational amplifiers, and interfacing devices	Prerequisites: A grade of C or better in ELT113 or permission of Department or Division.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
ELT241	Microcontrollers	General microcomputer architecture including program flow, data flow, and functional operation of subunits; number systems and data codes; basic digital circuits and devices; specific microprocessor architecture; problem solving concepts using pseudocode; assembly language programming concepts including iteration and select structures, arithmetic and logical operations, arrays and indexing; addressing modes; subroutines and macros; input/output operations; debugging and documenting programs	Prerequisites: A grade of C or better in ELT131 and NET181.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
ELT243	Microprocessor Applications	Presents the microprocessor in computing and control applications. System hardware and software used to control the microprocessor system to perform input/output operations	Prerequisites: A grade of C or better in ELE241 or ELT241.	L+L 3.0 5.0 5.0
ELT251	Electronic Instrumentation	Electronic instruments and their usage in measuring and analyzing electronic circuits. Includes both analog and digital meters, oscilloscopes, and digital logic analyzers. Covers automatic test equipment, various transducers, and reliability requirements.	Prerequisites: A grade of C or better in ELT195, or ELC120, or permission of Department or Division.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0

ELT261	Communications Electronics	AM(amplitude modulation), FM(frequency modulation), SSB(single sideband), TV(television) and pulse modulation transmitters and receivers. Digital systems, transmission lines, antennas, and wave propagation theory. Related laboratory experience	Prerequisites: A grade of C or better in ELT195 or equivalent.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
ELT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ELT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

ELT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
ELT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
ELT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

ELT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ELT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
EMC101	CPR/Basic Cardiac Life Support	Designed to train students in the skills of cardiopulmonary resuscitation to include mouth-to-mouth, mouth-to-mask, cardiac compression, stabilization of adult, infant, and child victims with airway obstruction, respiratory, and cardiac arrest.	Prerequisites: Admission into the Emergency Medical Technology program.	8
EMC101	CPR/Basic Cardiac Life Support	Designed to train students in the skills of cardiopulmonary resuscitation (CPR) to include mouth-to-mouth, mouth-to-mask, cardiac compression, stabilization of adult, infant, and child victims with airway obstruction, respiratory, and cardiac arrest.	Prerequisites: Admission into the Emergency Medical Technology program.	8
EMC102	Emergency Medical Responder	A comprehensive course to train a lay person to provide care for patients suffering sudden illness or injury. For members of law enforcement agencies, industry, and the private sector.	Prerequisites: EMC101 or with Program Manager approval.	40

EMC104	Basic Emergency Medical Technology	Techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards and medical operations. IV monitoring, sudden infant death syndrome (SIDS), patient-assisted medication administration, automated external defibrillator, and blood-glucose monitoring. Includes participation in simulated clinical events.	Prerequisites: EMC102 or with Program Manager approval.	152
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EMC108	Emergency Medical Services and Fire Preparatory Academy	<p>This course is designed specifically for individuals seeking a career in the fire-medical service and addresses foundational emergency medical technology, hazardous materials, and firefighting content material, as well as meeting two of the prerequisites for the Fire Department Operations course also known as the "Fire Academy" (FSC102). These two prerequisites are Emergency Medical Technology (EMT/FSC104) and Hazardous Materials (FSC105). Upon successful completion of the course, the participant will be eligible to sit for the EMT and Hazardous Materials (Haz-Mat) certification examinations. The course meets current United States Department of Transportation (USDOT) national standard education guidelines for emergency medical technicians. Course teaches techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards, medical operations, intravenous (IV) monitoring, patient-assisted medication administration, automated external defibrillators (AEDs), and blood-glucose monitoring. The course meets the current Hazardous Materials First Responder certification requirements for the Arizona Center for Fire Service Excellence. The course will cover basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to</p>	Prerequisites: Admission into the Emergency Medical Services and Fire Preparatory Academy program.	300
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		scene management. Confined space operations in accordance with the National Fire Protection Agency.		
EMT101	Basic Life Support/Cardiopulmonary Resuscitation (CPR) for Health Care Providers	Designed to provide the allied healthcare provider with the knowledge and skills to perform Basic Life Support (BLS) according to current guidelines for emergency cardiovascular care (ECC).	Prerequisites: None.	L+L 0.5 0.5 0.5
EMT101AB	Basic Life Support/Cardiopulmonary Resuscitation (CPR) Practicum for Health Care Providers	Designed to assess the allied healthcare provider in the skills of Basic Life Support (BLS) according to current guidelines for emergency cardiovascular care (ECC).	Prerequisites: Successful completion of Healthcare Provider CPR AED Online Part 1 course from an American Heart Association (AHA) certified program.	L+L 0.25 0.25 0.25
EMT102AB	Emergency Medical Responder	A comprehensive course to train a lay person to provide care for patients suffering sudden illness or injury. For members of law enforcement agencies, industry, and the private sector.	Prerequisites: None.	L+L 3.0 3.0 3.0
EMT104	Emergency Medical Technology	Designed as the Emergency Medical Technician (EMT) lecture to prepare students for scope of practice and standard of care with comprehensive assessment, diagnostic technology, patient advocacy, ethical and professional behaviors, critical thinking, decision-making, and patient management of medical and trauma emergencies and non-emergencies.	Prerequisites: Appropriate score on Reading placement test to demonstrate minimum tenth grade level reading, or completion of an Associate's degree or higher from an accredited institution.	LEC 10.0 10.0 10.0
EMT104AA	Practical Skills Testing	Manipulative skills testing of specific skills identified by the scope of practice for EMT Basic Students. Successful completion qualifies the student for EMT Basic Written Exam for National Certification.	Prerequisites: None. Corequisites: EMT/FSC104.	LAB 0.5 0.5 0.5

EMT104AB	Applied Practical Studies for Emergency Medical Technology	Simulation of actual emergency responses, with practical application of techniques and skills covered in EMT curricula. Scenario based learning applied to the techniques of emergency medical care in accordance with national and state curriculum. Practical application of anatomy, physiology, patient assessment, and treatment of medically or traumatically compromised patients, special hazards and medical operations. Also includes patient-assisted medication administration, semi-automatic external defibrillator and blood glucose monitoring. Students operate in outside, scenario based environments.	Prerequisites: None. Corequisites: EMT104.	LAB 0.5 0.5 0.5
EMT104LL	Emergency Medical Technology Practicum	Designed as the simulated Emergency Medical Technician (EMT) practicum in which the student synthesizes standard of care and scope of practice with comprehensive assessment and diagnostic technology, patient advocacy, ethical and professional behaviors, critical thinking, decision-making, and patient management of medical and trauma emergencies. Provides scenario based learning applied to the techniques of emergency medical care in accordance with national and state curriculum.	Prerequisites: A grade of C or better in EMT104 or permission of Instructor or Corequisites: EMT104.	LAB 2.0 3.5 3.5
EMT106	Ambulance Operations	Practical application of rules and regulations governing care and transport of patient. Inventory, methods of disinfection, and charge procedures covered. Practical and defensive driving techniques and maintenance of the ambulance demonstrated and practiced, according to the U.S. Department of Transportation (DOT) National Highway Traffic Safety Administration (NHTSA)	EMT at any level of certification.	L+L 2.0 2.0 2.0



EMT108	Tactical Safety and Street Survival for EMTs	Principles of response to emergencies in potentially dangerous situations. Emphasis on recognizing and responding to potentially violent situations, including active crime scenes and domestic terrorism. Emphasis on personal protection, de-escalation, communication skills, defensive tactics, and interaction with local and national public safety and law enforcement professionals.	Prerequisites: Healthcare provider certification or licensure or police officer with POST certification. Level 1 DPS fingerprint clearance card or permission of Department or Division.	L+L 3.0 3.0 3.0
EMT116	Emergency Medical Communications (EMD)	Designed to educate and train individuals as the emergency link among the community, health care providers, and law enforcement agencies. Comprehensive program to educate and train in procedures of communications, interrogation, assessment, and deployment. Includes interactive computer lab and scheduled observation with assignment at a dispatch center.	Prerequisites: A grade of C or better in EMT101 or Corequisites: EMT101 or any current American Red Cross or CPR for the Professional Rescuer or American Heart Association Basic Life Support Health Care Provider validation.	L+L 1.5 1.8 1.8
EMT120	Spanish For Emergency-Care Providers	Participative course for prehospital and other emergency-care providers. Vocabulary, pronunciations, voice inflections, phrases, conversational terms, and methods of interviewing the ill or injured victim. Cultural information to facilitate approach and interaction with the victim, family, and/or significant other. Documentation of the interview content on the prehospital encounter form	Certified EMT or licensed medical personnel.	LEC 1.0 1.0 1.0

EMT165	Pediatric Education for Prehospital Providers: Basic	An interactive, scenario-based course designed for Basic EMTs (Emergency medical technicians) who are not yet practicing in the field. Enables these EMTs to perform a rapid assessment of sick and injured children in a variety of different circumstances. Includes use of pediatric assessment triangle, developmental differences, injury prevention, basic airway management techniques, recognition of medical emergencies such as pediatric trauma, mechanism of injury, submersion events, children with special health care needs, abuse and neglect, child and family interactions, use of specialized equipment, and special issues in pediatric transportation. Treatment to children is in accordance with recommendations of the American Academy of Pediatrics.	Prerequisites: A grade of C or better in EMT/FSC104 or permission of Instructor.	L+L 2.0 2.87 2.87
EMT200	Refresher Course for Certified Emergency Medical Technicians	Designed to meet National and Arizona Department of Health Services (A-DHS) recertification for EMTs. Enhances the knowledge base of the Emergency Medical Technician (EMT) and reinforces basic skills competencies.	Prerequisites: Current validation in Basic Life Support (BLS) Health Care Provider/Professional Rescuer or permission of Instructor.	L+L 2.0 2.7 2.7
EMT200AA	EMT Certification Renewal Challenge	Designed to contribute to Arizona Department of Health Services (A-DHS) Bureau of Emergency Medical Services (B-EMS) recertification requirements for Emergency Medical Technician (EMT) according to the U.S. Department of Transportation (DOT) EMT National Curriculum and the Arizona EMT Refresher Curriculum Guidelines.	Current validation in Basic Life Support (BLS) Health Care Provider/Professional Rescuer or proof of current registry with the National Registry of Emergency Medical Technicians (NREMT).	LEC 0.6 0.6 0.6

EMT200AB	EMT-Basic Certification Expanded Refresher Challenge	Designed to contribute to Arizona Department of Health Services (A-DHS) Bureau of Emergency Medical Services (B-EMS) recertification requirements for Emergency Medical Technician Basic (EMTB) according to the U.S. Department of Transportation (DOT) EMT-Basic National Curriculum and the Arizona EMT Basic Refresher Curriculum Guidelines	Current Basic Life Support American Heart Association Healthcare Provider CPR or equivalent and current EMT Basic certification in the state of Arizona Must be currently functioning as an EMT Basic.	LEC 1.0 1.0 1.0
EMT201	Interactive Basic EMT Refresher	Designed to contribute to Arizona Department of Health Services recertification requirements for Emergency Medical Technicians (EMT) according to the US Department of Transportation (DOT) EMT-Basic National Curriculum and the Arizona Basic EMT Refresher Curriculum Guidelines. Enhances the knowledge base of the EMT. Updates a wide variety of subjects including respiratory and cardiac emergencies, and interaction with advanced life support providers	(Current EMT Basic certification in the state of Arizona or proof of current registry with the National Registry of Emergency Medical Technicians [NREMT]) and validation in Basic Life Support (BLS) Health Care Provider/Professional Rescuer.	L+L 1.0 2.2 2.2
EMT215	Stress and Emergency Services Professionals	Participative course designed to familiarize students with differences which exist in the socioeconomic, cultural, organizational, and technologic environments and the distress that can occur to emergency-care providers functioning in those arenas. Physiologic, psychologic and behavioral manifestations of distress as it relates to emergency responders. Explores distress management options with emphasis on individual techniques and organizational programs	Currently employed as prehospital-care provider or registered nurse working in the prehospital setting.	LEC 3.0 3.0 3.0

EMT230	Advanced Concepts for EMTs	Designed to meet Arizona Department of Health Services recertification requirements for EMTs. Enhances the knowledge base of the Emergency Medical Technician (EMT) and incorporates new information into daily practice. Updates a wide variety of subjects including medical and trauma emergencies, cardiac life support, interaction with advanced life support providers, and emergency scene management	Current EMT certification in the state of Arizona.	L+L 1.5 1.5 1.5
EMT238	Vehicular Extrication and Patient Stabilization	Participative course designed for the Emergency Medical Technicians (EMT). Incorporates new knowledge and skills necessary to access, extricate, and care for victims of crash incidents. Provides exposure to scene management, including size-up, disentanglement, victim stabilization for single and multi-victim situations, hazardous materials incidents, integration of local emergency medical services (EMS) for patient assessment and management, and standard operating procedures to selected victim scenarios	Basic EMT certification current enrollment in an EMT-Basic program nurse with emergency department experience or law enforcement personnel or permission of Instructor.	LEC 2.0 2.0 2.0
EMT245	Trauma Management I	Designed to instruct prehospital care personnel in the critical skills necessary to manage the trauma victim and the emergency scene through the Incident Command System (ICS). Enhances basic emergency medical technology (EMT) skills by focusing on emergency care interventions. Provides exposure to victim assessment, initial treatment, resuscitative techniques, victim stabilization, transportation of the victim to an emergency care facility, and documentation	Basic EMT certification or nurse with emergency room experience or permission of Department or Division.	L+L 2.0 3.5 3.5

EMT258	Victimology and Crisis Management	Victimology, the criminal justice system, techniques of crisis intervention, and the importance of a multicultural and global perspective. Includes sexual assault, family violence, post-traumatic stress disorder, the role of substance abuse, effective coping skills, appropriate community resources and the responsiveness of the justice system.	Prerequisites: None.	LEC 3.0 3.0 3.0
EMT260	Advanced Airway Management for EMTs	Designed to instruct emergency care personnel in the critical skills necessary to establish and maintain an airway of the traumatized or medically compromised patient. Airway skills include oxygen therapy with all adjuncts, administration of pharmaceuticals via the endotracheal (ET)/pharyngeal tracheal lumen airway (PTLA), management of the airway as a route for medications, and invasive airway procedures. Content concurrent with Department of Transportation Guidelines and the American College of Surgeons Division on Trauma Standards of Care	Certified EMT or licensed registered nurse with emergency department experience; EMT or emergency department licensed registered nurse with Medical Control physician supervision according to Arizona Department of Health Services (A-DHS) Bureau of Emergency Medical Services (B-EMS).	L+L 2.0 2.0 2.0
EMT264	Vascular Access for EMTs	Includes review of anatomy of the circulatory system. Skills include peripheral intravenous cannulation techniques, fluid resuscitation, obtaining venous blood samples for laboratory analysis, infection control techniques for the safety of self and victim, and complications of intravenous cannulation; each and all with medical control. Content concurrent with American College of Surgeons Committee on Trauma, Standards of Care	(EMT-Basic or registered nurse with emergency department experience or licensed physician or physician assistant) or permission of Instructor.	L+L 1.0 1.0 1.0

EMT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
EMT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
EMT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ENG071	Preparatory Academic Writing I	Emphasizes preparation for college level composition and related reading tasks with a focus on communicating through complete, grammatically correct writing, organized to communicate a central idea.	Prerequisites: Appropriate writing placement test score or permission of Department or Division.	LEC 3.0 3.0 3.0

ENG081	Preparatory Academic Writing II	Emphasizes preparation for college-level composition and related reading tasks with a focus on critical writing, reading, and thinking skills and processes	Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG071 or ESL077, or permission of Department or Division.	LEC 3.0 3.0 3.0
ENG091	Preparatory Academic Writing III	Emphasizes preparation for first year composition with a focus on critical writing, reading, and thinking skills and processes at an increased level of academic complexity.	Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG081 or ESL087, or permission of Department or Division.	LEC 3.0 3.0 3.0
ENG091AA	Essay Fundamentals	Emphasizes preparation for college-level composition by focusing on organizational skills and establishing effective writing strategies.	Prerequisites: Appropriate English placement test score or a grade of C or better in ENG081 or ESL087, or permission of Department or Division Chair.	LEC 1.0 1.0 1.0
ENG091AB	Essay Conventions	Emphasis on preparation for college-level composition with a focus on organizational skills. Establishing effective writing strategies through multiple writing projects.	Prerequisites: Appropriate English placement test score or a grade of C or better in ENG091AA, or permission of Department or Division Chair.	LEC 1.0 1.0 1.0
ENG091AC	Writing and Reading for Purpose	Emphasis on preparation for college-level composition with a focus on organizational skills. Establishing effective writing strategies through multiple writing projects.	Prerequisites: Appropriate English placement test score or a grade of C or better in ENG091AB, or permission of Department or Division Chair.	LEC 1.0 1.0 1.0
ENG095AA	Tutored Developmental Writing: Generating and Drafting	Structured tutorial assistance in writing skills to help students achieve success in a developmental writing course in which they are concurrently enrolled. Emphasis on generative writing skills.	Prerequisites: None. Corequisites: ENG081 or ENG091.	L+L 1.0 1.0 1.0
ENG095AB	Tutored Developmental Writing: Revising and Editing	Structured tutorial assistance in writing skills to help students achieve success in a developmental writing course in which they are concurrently enrolled. Emphasis on revising and editing skills.	Prerequisites: None. Corequisites: ENG081 or ENG091.	L+L 1.0 1.0 1.0

ENG100AA	American-English Spelling System	American-English spelling system rules, mnemonic devices.	Prerequisites: Appropriate English placement test score, or a grade of C or better in ENG091 or ESL097 or permission of Instructor.	LEC 1.0 1.0 1.0
ENG100AB	Vocabulary Development	Latin and Greek derivatives, development of competency and discrimination in word choice, specialized vocabulary.	Prerequisites: Appropriate English placement test score or a grade of C or better in ENG091 or ESL097 or permission of Instructor.	LEC 1.0 1.0 1.0
ENG100AC	The Mechanics of Written English	Review of the mechanics of written English, including punctuation, arbitrary marks and usages, capitalization, agreement, tense, and sentence patterns.	Prerequisites: Appropriate English placement test score or a grade of C or better in ENG091 or ESL097 or permission of Instructor.	LEC 1.0 1.0 1.0
ENG100AD	Grammar and Usage	The social aspects of grammar and usage, including appropriate levels of formal and informal language.	Prerequisites: Appropriate English placement test score or a grade of C or better in ENG091 or ESL097 or permission of Instructor.	LEC 1.0 1.0 1.0
ENG100AE	Composition Skills	Developing generative and evaluative writing skills using selected software programs.	Prerequisites: Appropriate English placement test score or a grade of C or better in ENG091 or ESL097 or permission of Instructor.	LEC 1.0 1.0 1.0
ENG101	First-Year Composition	Emphasis on rhetoric and composition with a focus on expository writing and understanding writing as a process. Establishing effective college-level writing strategies through four or more writing projects comprising at least 3,000 words in total.	Prerequisites: Appropriate district placement, or a grade of B or better in ALT100, or a grade of C or better in ENG091 or ESL097 or WAC101 OR (Prerequisites: ALT100. Corequisites: ENG100A+ or ENG101LL or ENG107LL or WAC101).	LEC 3.0 3.0 3.0
ENG101LL	First-Year Composition Lab	Supplemental instruction for composition courses. Focus on developing effective writing processes to address a range of rhetorical situations.	Prerequisites: WritePlacer score of 0, 1, 2, 3 or 4. Corequisites: ENG101.	LAB 1.0 3.0 3.0



ENG102	First-Year Composition	Emphasis on rhetoric and composition with a focus on persuasive, research-based writing and understanding writing as a process. Developing advanced college-level writing strategies through three or more writing projects comprising at least 4,000 words in total.	Prerequisites: A grade of C or better in ENG101.	LEC 3.0 3.0 3.0
ENG107	First-Year Composition for ESL	Equivalent of ENG101 for students of English as a Second Language (ESL). Emphasis on rhetoric and composition with a focus on expository writing and understanding writing as a process. Establishing effective college-level writing strategies through four or more writing projects comprising at least 3,000 words in total.	Prerequisites: Appropriate district placement, or a grade of B or better in ALT100, or a grade of C or better in ENG091 or ESL097 or WAC101 OR (Prerequisites: ALT100. Corequisites: ENG100A+ or ENG101LL or ENG107LL or WAC101).	LEC 3.0 3.0 3.0
ENG107LL	First-Year Composition Lab for ESL	Equivalent of ENG101LL for students of English as a Second Language (ESL). Supplemental instruction for composition courses. Focus on developing effective writing processes to address a range of rhetorical situations.	Prerequisites: WritePlacer score of 0, 1, 2, 3 or 4. Corequisites: ENG107.	LAB 1.0 3.0 3.0
ENG108	First-Year Composition for ESL	Equivalent of ENG102 for students of English as a Second Language (ESL). Emphasis on rhetoric and composition with a focus on persuasive, research-based writing and understanding writing as a process. Developing advanced college-level writing strategies through three or more writing projects comprising at least 4,000 words in total.	Prerequisites: A grade of C or better in ENG107.	LEC 3.0 3.0 3.0
ENG111	Technical and Professional Writing	Covers analyzing, planning, organizing, researching, and writing correspondence, reports, and presentations for specific work-related audiences. Includes integrating data and graphics into work-related documents and presentations.	Prerequisites: A grade of C or better in ENG101 or permission of Instructor.	LEC 3.0 3.0 3.0

ENG183	Basic Manuscript Writing: Fiction	Basic skills and techniques used by the professional fiction writer in writing fiction for publication, including characterization, plot development, writing dialogue, setting scenes, and establishing mood. Emphasis on writing scenes.	Prerequisites: None.	LEC 3.0 3.0 3.0
ENG184	Advanced Manuscript Writing I: Fiction	In-depth instruction in writing publishable manuscripts. Includes research techniques, writing query letters, advanced techniques in character, plot, and scene development. Emphasis on critiquing and revising manuscripts.	Prerequisites: A grade of C or better in ENG183 or permission of Instructor.	LEC 3.0 3.0 3.0
ENG200	Reading and Writing About Literature	Emphasis on critical analysis of various genres of literature; includes study of necessary terminology, introduction to methods of literary criticism, and practice in interpretation and evaluation	Prerequisites: A grade of C or better in ENG102.	LEC 3.0 3.0 3.0
ENG205	Nature of Poetry	A foundational course which focuses on the reciprocal nature of reading and writing poetry as well as acquiring a "critical vocabulary" for the appreciation of poetry. Examines the technical, cultural and aesthetic sources of established poets as well as work produced by student writers. Explores the creative writing process as well as poetic themes, styles and perspectives that contribute to the writing of original student poetry	Prerequisites: None.	LEC 3.0 3.0 3.0
ENG210	Creative Writing	Skills and techniques used in the production of marketable materials for contemporary publications that buy prose fiction, poetry, and expository articles.	Prerequisites: A grade of C or better in ENG102 or permission of Department or Division.	LEC 3.0 3.0 3.0
ENG211	Screenwriting	Principles and techniques necessary in planning, researching, and writing screenplays.	Prerequisites: A grade of C or better in ENG101 and ENG102 or permission of Instructor.	LEC 3.0 3.0 3.0

ENG213	Introduction to the Study of Language	Study of language as code; phonetics, phonology, morphology, syntax, semantics; language acquisition; historical and socio-linguistics	Prerequisites: A grade of C or better in ENG102 or ENG111 or permission of Instructor.	LEC 3.0 3.0 3.0
ENG215	Strategies of Academic Writing	Advanced course in techniques of analyzing and writing academic expository prose. Writing to be research based.	Prerequisites: A grade of C or better in ENG102 or ENG111 or permission of Instructor.	LEC 3.0 3.0 3.0
ENG216	Persuasive Writing on Public Issues	Advanced course in techniques of analyzing and writing persuasive arguments addressing topics of current public interest. Papers research based	Prerequisites: A grade of C or better in ENG102.	LEC 3.0 3.0 3.0
ENG217	Personal and Exploratory Writing	Using writing to explore one's self and the world one lives in; emphasis on journal writing as a source and inspiration for public writing	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
ENG218	Writing About Literature	Advanced writing course requiring analytical and expository essays about fiction, poetry, and drama. For non-English majors	Prerequisites: A grade of C or better in ENG102.	LEC 3.0 3.0 3.0
ENG219	Life Stories	Uses of biography and autobiography to pass on stories, hand down traditions, and share wisdom. Analysis and practice of biographical and autobiographical writing	Prerequisites: A grade of C or better in ENG101 and ENG102.	LEC 3.0 3.0 3.0
ENG235	Magazine Article Writing	Basic skills and techniques used by professional writers for publication in magazines. Includes analyzing markets, identifying article slant, research techniques, editing, and submission procedures. Emphasis on nonfiction.	Prerequisites: None.	LEC 3.0 3.0 3.0
ENG260	Film Analysis	Understanding and enjoyment of film and its correlation to literature, art, music, and other disciplines	Prerequisites: None.	LEC 3.0 3.0 3.0
ENG282AA	Volunteerism for English: A Service Learning Experience	Service learning field experience within private/public agencies, and citizen volunteer groups. Development of writing skills, analysis, and synthesis in on-site volunteer experience.	Prerequisites: A grade of C or better in ENG101 and (RDG100 or RDG100LL or higher) and permission of Instructor.	LAB 1.0 1.0 1.0

ENG295	Teaching Composition in the Two-Year College	Overview of the theoretical and pedagogical strategies of teaching composition in the community college.	Prerequisites: Bachelor's degree and permission of Instructor.	LEC 3.0 3.0 3.0
ENG296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ENG296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
ENG296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

ENG296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
ENG298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ENG298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ENG298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ENH110	Introduction to Literature	Introduction to international literature through various forms of literary expression; e.g., poetry, drama, essay, biography, autobiography, short story, and novel. Provides a global overview of literature with special emphasis on diverse cultural contributions of women, African Americans, Asian Americans, Hispanic Americans, and Native Americans	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH111	Literature and the American Experience	Introduction to the foundations and diversity of American culture through a survey of its literature, including minority and women writers. Exploration of various facets of American culture including frontier, regional, rural, and urban life; ethnic, racial, and immigrant experience; and political and social philosophies	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH112	Chicano Literature	Introduction to the works of Mexican-American writers of the Southwest. Samples poetry, fiction, and essays viewed in their relationship to American cultural heritage and to contemporary culture	Prerequisites: None.	LEC 3.0 3.0 3.0

ENH113	Writers/Directors and Current Issues	In-depth analysis of literary texts by contemporary writers/directors throughout the world, including essayists, journalists, playwrights, novelists, directors, short story writers, and/or poets. Examines perspectives representing a variety of cultures. Critical responses to current issues of worldwide interest examined, including topics as environment, technology, medicine, economics, politics, education, human rights, law and order	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH114	African-American Literature	Survey of major African-American writers from Colonial period through the present; analysis of trends and movements within African-American literary history; analysis of literary types and selected works	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH117	Rap Literature: The Oral Tradition	Survey of selected rap poetry looking at the oral tradition of Africa, the Caribbean, and the United States as precursors to East Coast, West Coast, Southern, North Central, and International development of the genre. Investigation of cultural environments, historical events, competitions (the "battles"), artists' biographies, and parallel art forms as they relate to the analysis of the genre and its themes	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH120	The Literature of Science Fiction	Surveys the last one hundred and fifty years of Science Fiction literature. Investigates the similarities between Science Fiction and other imaginative literatures Examines the Science Fiction genre, sub genres, and themes from a variety of perspectives, as well as social issues	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH130	Mystery Fiction from the Nineteenth Century to the Present	A study of mystery fiction as a literary genre and as a reflection of culture through the writings of significant authors	Prerequisites: None.	LEC 3.0 3.0 3.0

ENH140	Representations of Society in Literature and Film	Explores how a particular field of endeavor is and has been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0
ENH140AA	Sports in Literature and Film	Explores how sports are and have been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0
ENH140AB	Business in Literature and Film	Explores how business is and has been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0



ENH140AC	Science in Literature and Film	Explores how science is and has been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0
ENH140AD	Art in Literature and Film	Explores how art is and has been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0
ENH140AE	Education in Literature and Film	Explores how education is and has been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0

ENH140AF	Law in Literature and Film	Explores how law is and has been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0
ENH140AG	Medicine in Literature and Film	Explores how medicine is and has been represented in narrative literature and film, using examples from a range of U.S. media. Investigates the ways in which narrative representation engages changing cultural and historical contexts, and shapes of how fields of human endeavor are perceived. Focus on analysis of narratives' form and content, and the construction of meaning.	Prerequisites: Appropriate reading placement test score and eligibility for ENG101 as indicated by appropriate writing placement test score.	LEC 3.0 3.0 3.0
ENH190	Introduction to US Ethnic Literature	Introduction to the US ethnic literatures of African Americans, Arab Americans, Asian Americans, Latinas/os, Native Americans, Mixed Race, and other emerging ethnic groups through various expressions. Examines the interconnections of the various experiences of racialized groups living in the US. Provides ethnic US literature a global context through study of the interconnections with the literatures of Africa, Asia, Latin America, and Oceania. Focus on literary production of at least four specific US ethnic groups and relevant international literatures.	Prerequisites: A grade of C or better in ENG101 or ENG107 or Corequisites: ENG101 or ENG107.	LEC 3.0 3.0 3.0

ENH201	World Literature Through the Renaissance	Examines a selection of the world's literary masterpieces within their cultural contexts from ancient times through the Renaissance. Analyzes the influences of major literary philosophies, themes, genre, and styles. Assesses the contributions of major writers. Introduces the terminology of literary analysis	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH202	World Literature After the Renaissance	Includes a selection of the world's literary masterpieces from the Renaissance to modern times	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH204	Introduction to Contemporary Literature	Examines the work of major writers in poetry, fiction and drama from 1945 to the present. Examines important movements that have developed within these genre since 1945	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH206	Nature and Environmental Literature	Investigates major themes in nature and environmental writing. Explores relationship between humanity and the environment as expressed through fiction, non-fiction, and poetry. Examines how literature drives attitudes and policies	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH214	Poetry Study	Involves reading, discussing, and analyzing poetry of various forms and from selected periods	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH221	Survey of English Literature Before 1800	Emphasizes the social and political backgrounds as well as the form and content of English literature from Anglo-Saxon times to the end of the eighteenth century.	Prerequisites: A grade of C or better in (ENG101 or ENG107) or equivalent.	LEC 3.0 3.0 3.0
ENH222	Survey of English Literature After 1800	Emphasizes the social and political backgrounds as well as the form and content of English literature in the nineteenth and twentieth centuries	Prerequisites: A grade of C or better in (ENG101 or ENG107) or equivalent.	LEC 3.0 3.0 3.0

ENH230	Introduction To Shakespeare	Introduces Shakespeare the playwright, the sonneteer, the linguist, and the citizen of the 17th century. Considers the major tragedies, comedies, histories, and sonnets; focuses on the use of language; and connects the writer to the time. Some emphasis on Shakespeare's influence through the centuries, noting parallels between the late 16th century and the late 20th century	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH231	Introduction to Shakespeare: The Early Plays	Introduces Shakespeare, the playwright and linguist, and the late 16th century. Considers representative comedies, histories, and tragedies from Shakespeare's early period, from 1590-1599. Focuses on the use of language and connects the writer to his historical era. Also considers Shakespeare's relevance to the present time .	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH232	Introduction to Shakespeare: The Late Plays	Introduces Shakespeare, the playwright and linguist, and the early 17th century. Considers representative comedies, histories, tragedies, and romances from Shakespeare's late period, 1600-1611. Focuses on the use of language and connects the writer to his historical era. Also considers Shakespeare's relevance to the present time.	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH235	Survey of Gothic Literature	A study of the origins, common elements and characteristics, and historical development of Gothic literature with an exploration of the literary techniques and psychological aspects of the genre	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH241	American Literature Before 1860	Includes literature written prior to 1860 in the United States.	Prerequisites: A grade of C or better in ENG101.	LEC 3.0 3.0 3.0
ENH242	American Literature After 1860	Includes literature written after 1860 in the United States	Prerequisites: None.	LEC 3.0 3.0 3.0

ENH245	J.R.R. Tolkien and C.S. Lewis: Battling Modernism	Focuses on the writings, language, themes, influences and vision of J.R.R. Tolkien and C.S. Lewis in contrast to the ideas and literature of the Modernist movement.	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH250	Classical Backgrounds in Literature	Introduction to selected readings of Greek and Latin literature in translation and to the key elements as integral aspects of Western culture through successive ages	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH251	Mythology	Deals with the myths and legends of civilizations with the greatest influence upon the development of the literature and culture of the English speaking people, and compares those myths with myths from other cultures	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH252	Biblical Backgrounds of Literature	Deals with genres and/or themes in reference to the Old and New Testament which are recurrent in world literature	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH253	Contemporary Global Literature and Film	Characteristics of literary and cinematic mediums. Challenges of adapting literature to film. Global examination of historical, religious, socio-economic, political, and colonial/post colonial themes depicted in Western and non-Western literature and film (e. g., Africa, Asia, and Latin America) outside the United States. Use of narrative in each medium and how it translates various global/international perspectives and cultural assumptions. Specific genres present in literature and film. Cultural metaphors and symbols used in literature and film	Prerequisites: A grade of C or better in ENG101.	LEC 3.0 3.0 3.0
ENH254	Literature and Film	Presents works of literature and their film versions and analyzes distinguishing techniques of each medium	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0

ENH255	Contemporary U.S. Literature and Film	Strengths and weaknesses of literature and film. Challenges of adapting literature to film. Addressing racial, ethnic, gender, class and religious differences between cultures and mediums. Use of narrative in each medium and how it translates various cultural values and assumptions. Specific genres present in literature and film. Cultural metaphors and symbols used in literature and film	Prerequisites: A grade of C or better in ENG101.	LEC 3.0 3.0 3.0
ENH256	Shakespeare on Film	Presents cinematic versions of Shakespeare's plays and explains and analyzes how the dramatist's major tragedies, comedies, histories and romances have been presented on film	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH259	American Indian Literature	Contemporary American Indian forms of literary expression. Selected oral traditions of American Indians. Trends and movements within American Indian literary history	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH260	Literature of the Southwest	Investigates major themes in Southwestern American literature including the Western myth, minority roles in the region's literature, control of nature versus primacy of nature, and growth. Both prose and poetry are examined with an emphasis on contemporary Southwestern writing	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH275	Modern Fiction	Includes novels and short stories of modern writers which reflect significant themes of our time	Prerequisites: None.	LEC 3.0 3.0 3.0

ENH277	Narrative Genres	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 or ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AA	Dark Futures: Dystopian Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 or ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AB	Whodunnits: Mystery Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 or ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AC	Happily Ever: Children's Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0

ENH277AD	Stuff Blows Up: Action Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AE	Tour of Duty: War Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AF	Heroic Quests: Fantasy Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AG	Out There: Science Fiction Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0



ENH277AH	Facing Fear: Horror Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AI	Make 'Em Laugh: Comedy Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AJ	Love and Passion: Romance Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0
ENH277AK	The Wild Frontier: Western Narrative	Explores how narrative shapes culture and culture shapes narrative through the international study of a particular genre in multiple media (e.g. literature, film, television, computer games, etc.). Investigates how a genre evolves, and how genre conventions influence narrative production and reception. Focus on analysis of key texts and their contexts.	Prerequisites: A grade of C or better in ENG101 and ENG107. ENH110 or ENG200 suggested but not required.	LEC 3.0 3.0 3.0

ENH280	Topics in American Literature	Exploration of selected topic(s) in American Literature. Focuses on a theme, genre, era, technique, or critical approach. Includes reading and interpretation of literature from a variety of cultures within the United States.	Prerequisites: A grade of C or better in (ENG101 or ENG107) or permission of Instructor.	LEC 3.0 3.0 3.0
ENH284	19th Century Women Writers	Investigates major themes in literature by women writing in the 19th century including the nature of women's lives in the family, in work situations, and in society. Poetry, prose, essays and drama are examined with an emphasis on common themes	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH285	Contemporary Women Writers	Explores twentieth century literature (short stories, essays, plays, and poetry) written by women and about women. Focus on themes relevant to women's lives regardless of age, creed, or ethnic background	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH290	Modern Irish Literature and Culture	Literature of Ireland from 1880 to the present. Examines how uniquely Irish themes have been reflected in high and popular culture and how these cultures and themes have influenced Ireland's literary tradition	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH291	Children's Literature	Review of folk and modern literature from a variety of world cultures, including application of literary criteria to folk and modern literature for children	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH292	Literature for Adolescents	Reviews selected literature written for adolescents. Develops and applies literary criteria for the evaluation of adolescent literature	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH294	Multicultural Folktales	Study of multicultural folktales, exploring the impact of the oral tradition in American society and showing classroom applications	Prerequisites: None.	LEC 3.0 3.0 3.0

ENH295	Banned Books and Censorship	History, motivations, and effects of censorship in a democratic society. Censorship and book banning as a method of silencing diverse voices. Critical analysis of banned or challenged literature for children and adults.	Prerequisites: None.	LEC 3.0 3.0 3.0
ENH296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
ENH296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

ENH296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
ENH296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
ENH298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

ENH298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ENH298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ENV101	Introduction to Environmental Science	Interdisciplinary analyses of interactions among living and non-living environmental components, focusing on human influences. Scientific methods of investigating and solving environmental problems are introduced	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
ENV119	Introduction to Geospatial Technology for Environmental Science	Introduction to geospatial technology concepts and applications including map reading, aerial photography interpretation, and remote sensing. Hands-on experience investigating the local environment with an air photo browser, remote imaging viewer, and a geographic information system	Prerequisites: None.	L+L 4.0 4.0 4.0

ENV219	Geospatial Technology for Environmental Sciences I	Hands-on experience using Geographic Information Systems (GIS), Remote Sensing (RS), and Global Positioning Systems (GPS) with applications using local environmental data.	Prerequisites: A grade of C or better in EMV119 or Corequisites: ENV119 or permission of Instructor.	L+L 4.0 4.0 4.0
ENV273	Geospatial Technology for Environmental Sciences II	Advanced geospatial techniques including Geographic Information System (GIS) data integration, surface creation and analysis, 3D displays, and animation using local environmental data	Prerequisites: A grade of C or better in ENV219 or permission of Instructor.	L+L 4.0 4.0 4.0
ENV295	Geospatial Technology for Environmental Sciences Projects	Completion of a self-paced geospatial technology project.	Prerequisites: A grade of C or better in ENV273 or permission of Instructor.	L+L 4.0 4.0 4.0
EPD205	Science, Technology, Engineering, and Mathematics (STEM) Education	A basic introduction to Science, Technology, Engineering, and Mathematics (STEM) education in the United States. Emphasis on the understanding of state and national educational acad standards, the importance of the role of higher education in closing the achievement gap and effective strategies for improving teaching in the STEM disciplines. Includes examples of successful school programs along with practical applications for teachers in the classroom and the involvement of community colleges in the STEM Education landscape.	Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary or special education certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD212AA	Elementary Art Methods and Curriculum Development	Overview and practical application of teaching elementary art. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0

EPD212AB	Secondary Art Methods and Curriculum Development	Overview and practical application of teaching secondary art. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD213AA	Elementary Dance Methods and Curriculum Development	Overview and practical application of teaching elementary dance and movement. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD213AB	Secondary Dance Methods and Curriculum Development	Overview and practical application of teaching secondary dance and movement. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD214AA	Elementary Dramatic Arts Methods and Curriculum Development	Overview and practical application of teaching elementary dramatic arts. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD214AB	Secondary Dramatic Arts Methods and Curriculum Development	Overview and practical application of teaching secondary dramatic arts. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD215AA	Elementary Music Methods and Curriculum Development	Overview and practical application of teaching elementary music. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0

EPD215AB	Secondary Music Methods and Curriculum Development	Overview and practical application of teaching secondary music. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD216AA	Elementary Physical Education Methods and Curriculum Development	Overview and practical application of teaching elementary physical education. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD216AB	Secondary Physical Education Methods and Curriculum Development	Overview and practical application of teaching secondary physical education. Covers teaching strategies, learning environments, teaching resources, and use of technology. Emphasis on State Board of Education Professional Teaching Standards.	Must hold a Career and Technical Education (CTE) provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD220	Introduction to Serving English Language Learners for Certified Teachers	Rationale for and current educational and legal issues for serving English Language Learners (ELL). Comparison and evaluation of various types of language educational models including Structured English Immersion (SEI), English as a Second Language (ESL) and bilingual/Dual Language Immersion (DLI). Includes SEI, ESL, and bilingual/DLI strategies. This course is for certified teachers.	Prerequisites: Provisional or standard teaching certificate for elementary, secondary, special, or career and technical education or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD224	Teaching in the Middle School	Overview of teaching in the middle school grades five through nine. Topics include characteristics of young adolescents, responsibilities of teaching teams, middle school curriculum, design and interdisciplinary versus integrated units of study. Classroom management techniques and effective teaching strategies also covered	Must hold a provisional or standard elementary or secondary education teaching certificate.	LEC 3.0 3.0 3.0



EPD225	Foundations of Gifted Education and Identification of Gifted Learners	Students explore definitions of giftedness, ways of identifying gifted and talented students, and types of programs and services developed for this population. Students address issues in educating gifted and talented students.	Must hold a provisional or standard early childhood, elementary, secondary or special education teaching certificate.	LEC 3.0 3.0 3.0
EPD226	Social and Emotional Needs of Gifted and Talented Students	Students explore the intellectual, social, emotional, developmental, and educational characteristics of gifted and talented students.	Prerequisites: Must hold a provisional or standard early childhood, elementary, secondary or special education teaching certificate and a grade of C or better in EPD225 or (permission of Department or Division chairperson).	LEC 3.0 3.0 3.0
EPD227	Methods and Models for Differentiating Curriculum for Gifted Learners	Students explore the theory and practice of teaching methods and differentiating curriculum and instruction for gifted learners.	Prerequisites: Must hold a provisional or standard early childhood, elementary, secondary or special education teaching certificate and a grade of C or better in EPD225 or permission of Department or Division chairperson.	LEC 3.0 3.0 3.0
EPD228	Creativity and Critical Thinking Skills in Gifted Education	Students explore the concept of creativity, including theories and characteristics. Brain research on critical thinking and implications for gifted education is examined.	Prerequisites: Must hold a provisional or standard early childhood, elementary, secondary or special education teaching certificate and a grade of C or better in EPD225 (or permission of Department or Division chairperson).	LEC 3.0 3.0 3.0

EPD229	Gifted Education Practicum I	<p>Practical application of theories, models, and instruction for gifted education. Provides an opportunity to receive guided, practical, on-site experience working with gifted students. Requires observations of gifted students in a variety of settings, evaluation of teaching techniques, and critical review of academic standards as they relate to gifted learners and related professional organizations.</p>	<p>Prerequisites: Must hold a provisional or standard early childhood, elementary, secondary or special education teaching certificate and EPD225, EPD226, EPD227, and EPD228 (or permission of Department or Division chairperson).</p>	L+L 3.0 4.5 4.5
EPD230	Gifted Education Practicum II	<p>Supervised practicum. Emphasis on the provision of instruction and assessment to gifted and talented students. Covers lesson plan development, classroom procedures, classroom management, and assessment. Includes learner preparation, learner engagement, and learner outcome awareness.</p>	<p>Prerequisites: Must hold a provisional or standard early childhood, elementary, secondary or special education teaching certificate and EPD225, EPD226, EPD227, EPD228, and EPD229 (or permission of Instructor or Department or Division Chairperson).</p>	LAB 3.0 3.0 3.0
EPD233	Structured English Immersion and English as a Second Language Teaching Methods for Teachers	<p>Methods of planning, developing, and analyzing lesson plans in all content areas using English Language Learners (ELL) proficiency standards. Emphasis on components of curriculum content, teaching strategies, development/evaluation/adaptation of teaching materials, and the role of culture in learning. Examines the alignment of ELL proficiency standards to state academic standards. Covers multiple assessment techniques, tracking of student progress using the state mandated English language proficiency assessment, and use of assessment results for placement and accommodation. This course is for certified teachers.</p>	<p>Prerequisites: Provisional or standard teaching certificate for elementary, secondary, special, or career and technical education and (a grade of C or better in EDU220 or EPD220) or permission of Department or Division.</p>	LEC 3.0 3.0 3.0

EPD241	Bilingual/Dual Language Immersion Methods	Methods of developing lesson plans in the content areas within bilingual/Dual Language Immersion (DLI) programs. Emphasis on components of bilingual approaches, lesson development, teaching techniques, and evaluation of instructional materials.	Prerequisites: A grade of C or better in (EDU220 or EPD220) and must hold a provisional or standard teaching certificate for elementary, secondary, special, or career and technical education.	LEC 3.0 3.0 3.0
EPD244	Reading and Writing in SEI/ESL/Bilingual Settings	Introduction to Structured English Immersion (SEI)/English as a Second Language (ESL)/Dual Language Immersion (DLI) terminology, second language acquisition theories, and literacy terminology. Emphasis on instructional and assessment strategies as well as reading comprehension and writing skills.	Prerequisites: Provisional or standard teaching certificate for elementary, secondary, special, or career and technical education and (a grade of C or better in EDU220 or EPD220) or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD246	Teaching and Assessment of English Language Learners (ELL)	Teaching and assessment of English/language learners. Covers differentiated instruction, special education needs vs. language needs, learning environments in multilingual and multicultural classrooms, identification, exiting, and ongoing assessment of student learning. Legal issues and historical perspectives also covered. Linking assessment to instruction and the review of methods and techniques employed for language and academic assessment included. Standards emphasized.	Prerequisites: A grade of C or better in (EDU220 or EPD220) and must hold a provisional or standard teaching certificate for elementary, secondary, special, or career and technical education, or permission of Department or Division.	LEC 3.0 3.0 3.0
EPD247	Practicum for English as a Second Language (ESL) / Bilingual Teachers	Provides an opportunity to receive guided practical, on-site experience working with English/Language Learners (ELL). Requires observations of ELL students in a variety of settings, evaluation of teaching techniques, and critical review of academic standards as they relate to English as a Second Language (ESL) learners.	Prerequisites: (EDU220 or EPD220) and EDU230 and (ENG213 or SLC201) and (EDU233 or EPD233 or EPD241), and (provisional or standard for teaching certificate elementary, secondary, special, or career and technical education), or permission of Department or Division.	L+L 3.0 4.5 4.5

EPD248	Adolescent Behavior	Focuses on understanding adolescents' development including psychosocial, emotional, cognitive and physical. Covers impact of early experiences, relationships, and learning abilities. Establishment of a learning environment supportive of the adolescent emphasized. Includes current research findings related to adolescents.	Must hold a provisional or standard elementary or special education teaching certificate.	LEC 3.0 3.0 3.0
EPD249	Methods and Curriculum Development for Mathematics	Overview and practical application of teaching mathematics in K-8 grades. Development of lesson plans and assessment instruments emphasized. Current trends, State Board of Education Professional Teaching Standards and National Council of Teachers of Mathematics Standards also covered	Must hold a provisional or standard elementary or special education teaching certificate.	LEC 3.0 3.0 3.0
EPD250	Teaching Elementary Number Sense and Operations Grades K-8	Focus on knowledge and skills for number sense and operations grades K-8. Covers learning environments, teaching resources, and use of technology in the presentation of numeration, number theory and computation. Emphasis on State Academic Math and Common Core Standards. Includes practical application of teaching strategies for elementary students as well as teachers of mathematics.	Must hold a Career and Technical Education (CTE), provisional or standard elementary, secondary, or special education teaching certificate, or permission of Department or Division.	LEC 6.0 6.0 6.0
EPD251	Teaching Geometry and Measurement Grades K-8	Focus on knowledge and skills for geometry and measurement concepts for grades K-8. Covers geometric properties, transformation of shapes, coordinate geometry and measurement. Emphasis on State Academic Math and Common Core Standards. Includes practical application of teaching strategies for elementary students as well as teachers of mathematics.	Prerequisites: A grade of C or better in EPD250.	LEC 3.0 3.0 3.0

EPD252	Teaching Patterns, Algebra and Functions Grades K-8	Focus on knowledge and skills for patterns, algebra and functions grades K-8. Covers learning environments, teaching resources, and use of technology in the presentation of algebraic notation, properties, relations and functions, equations and inequalities. Emphasis on State Academic Math and Common Core Standards. Includes practical application of teaching strategies for elementary students as well as teachers of mathematics.	Prerequisites: A grade of C or better in EPD250.	LEC 6.0 6.0 6.0
EPD253	Teaching Data Analysis, Probability and Discrete Mathematics Grades K-8	Focus on knowledge and skills for data analysis, probability and discrete mathematics concepts for grades K-8. Covers statistics, sampling, systemic listing and counting, and vertex edge graphs. Emphasis on State Academic Math and Common Core Standards. Includes practical application of teaching strategies for elementary students as well as teachers of mathematics.	Prerequisites: A grade of C or better in EPD250.	LEC 3.0 3.0 3.0
EPD254	Mathematics Classroom Assessment	A thorough examination of techniques and strategies for assessment in the mathematics classroom. Focus on formative and summative assessments.	Prerequisites: A grade of C or better in EPD250, EPD251, EPD252, and EPD253.	LEC 3.0 3.0 3.0
EPD255	Research-Based Practices, Pedagogy, and Instructional Leadership in Mathematics	Designed to provide strategies that may be used when assuming leadership roles in mathematics. Focus on examining research-based practices, pedagogy, and techniques of instructional leadership in mathematics. Examination of academic math standards and common core standards.	Prerequisites: A grade of C or better in EPD250, EPD251, EPD252, EPD253, and EPD254.	LEC 3.0 3.0 3.0

EPD256	Science, Technology, Engineering, and Mathematics (STEM) Education and Technology	Overview of the current status of Science, Technology, Engineering, and Mathematics (STEM) education and technology in the United States and The Standards for Technological Literacy developed by the International Technology Education Association (ITEA). Emphasis on the impact of technology and its interdependence with the other STEM fields in engineering, science, and mathematics. Topics include: technology systems, processes and concepts, energy and power, communication, biotechnology, manufacturing, construction, and transportation technologies. Strategies for practical application in the classroom along with lesson plan development also covered.	Prerequisites: A grade of C or better in EPD205.	LEC 3.0 3.0 3.0
EPD257	Science, Technology, Engineering, and Mathematics (STEM) Education and Science	Overview of the current status of Science, Technology, Engineering, and Mathematics (STEM) education and science in the United States and the National Science Education standards. Emphasis on techniques associated with the scientific inquiry-based approach to teaching and learning science, models-based science teaching, and STEM science student research. Topics include the scientific 'process' skills, project-based learning, the 5E instructional model, and the interdisciplinary connection of science to other STEM fields. Strategies for practical application in the classroom along with lesson plan development also covered.	Prerequisites: A grade of C or better in EPD205.	LEC 3.0 3.0 3.0

EPD258	Science, Technology, Engineering, and Mathematics (STEM) Education and Engineering	Overview of the current status of Science, Technology, Engineering, and Mathematics (STEM) education and engineering in the United States. Emphasis on the underlying principles of engineering education and project-based learning. Topics include a brief history of engineering and its disciplines, technical communication skills, problem solving and teamwork, ethics, and engineering systems with modeling and design elements. Strategies for practical application in the classroom along with lesson plan development also covered.	Prerequisites: A grade of C or better in EPD205.	LEC 3.0 3.0 3.0
EPD259	Science, Technology, Engineering, and Mathematics (STEM) Education and Mathematics	Overview of the current status of Science, Technology, Engineering, and Mathematics (STEM) education and mathematics in the United States and the Mathematics Common Core Standards. Emphasis on techniques associated with the inquiry-based approach to teaching and learning mathematics, project-based learning, and the interdisciplinary connection of mathematics to other STEM fields. Strategies for practical application in the classroom along with lesson plan development also covered.	Prerequisites: A grade of C or better in EPD205.	LEC 3.0 3.0 3.0
EPD260	Technology in Education Overview	Exploration of the use of technology in education. Including history of technology in education, teacher and student technology standards, landmark studies related to using technology in education and utilization of technology in the classroom. Local, state, and national standards for education covered, as well as identification of professional development opportunities	Prerequisites: None.	LEC 2.0 2.0 2.0

EPD261	The Brain and Learning	Teaching and learning issues within a cognitive processes context. Covers emotion, memory, and recall as well as early brain development and its relationship to learning. Emphasis on current neuroscientific brain research and how it impacts teaching practice in preK-12 classrooms.	Prerequisites: None.	LEC 3.0 3.0 3.0
EPD262	Psychology in Education	Focus on the study and application of psychological principles, theories, and methodologies related to teaching and learning. Emphasis on developmental, learning, and motivational theories. Current trends also covered.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
EPD263AA	Technology as a Resource for Social Studies Educators: Grades K-3	Overview of integration of technology in the teaching of social studies in grades kindergarten through three. Local, state, and national standards for social studies covered. Identification of technological resources and their use emphasized	Prerequisites: A grade of C or better in EPD260.	LEC 1.0 1.0 1.0
EPD263AB	Technology as a Resource for Social Studies Educators: Grades 4-6	Overview of integration of technology in the teaching of social studies in grades four through six. Local, state, and national standards for social studies covered. Identification of technological resources and their use emphasized	Prerequisites: A grade of C or better in EPD260.	LEC 1.0 1.0 1.0
EPD263AC	Technology as a Resource for Social Studies Educators: Middle/High School	Overview of integration of technology in teaching social studies in the middle and high school levels. Local, state, and national standards for social studies covered. Identification of technological resources and their use emphasized	Prerequisites: A grade of C or better in EPD260.	LEC 1.0 1.0 1.0



EPD265AB	Technology as a Resource for Science Educators: Grade 4-6	An examination of Internet and software resources relevant to the fourth through sixth grade science instruction. Local, state, and national standards for science covered. Emphasis on analyzing available resources and practical classroom applications	Prerequisites: A grade of C or better in EPD260.	LEC 1.0 1.0 1.0
EPD265AC	Technology as a Resource for Science Educators: Grade 7-12	An examination of Internet and software resources relevant to the seventh through twelfth grade science instruction. Local, state, and national standards for science covered. Emphasis on analyzing available resources and practical classroom applications	Prerequisites: A grade of C or better in EPD260.	LEC 1.0 1.0 1.0
EPD269AA	Methods of Using Technology in the K-6 Classroom	Examination of the skills teachers need to effectively integrate technology into core curriculum. Examination of the necessary skills students need to meet national technology standards. Evaluate current research and apply to classroom practice. Lesson plan development emphasized	Prerequisites: A grade of C or better in EPD260.	LEC 3.0 3.0 3.0
EPD269AB	Methods of Using Technology in the 7-12 Classroom	Examination of the skills teachers need to effectively integrate technology into core curriculum. Examination of the necessary skills students need to meet national technology standards. Evaluate current research and apply to classroom practice. Lesson plan development emphasized	Prerequisites: A grade of C or better in EPD260.	LEC 3.0 3.0 3.0
EPD270	Theoretical and Research Foundations of Language and Literacy	Focus on scientifically-based research as the foundation for classroom reading instruction. Emphasis on the five major areas of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Application of techniques for organizing and implementing explicit, systematic instruction in each of these areas, and methods of regularly assessing children's performance in reading and language arts.	Must hold a provisional or standard elementary, secondary, or special education teaching certificate.	L+L 3.0 3.0 3.0

EPD271AA	Essential Elements of Elementary Reading and Writing Instruction K-8	Overview of the interrelated critical components of reading and writing instruction. Focus on developmental stages, benchmarks, and research-based instructional strategies to effectively teach literacy in the elementary grades.	Must hold a provisional or standard elementary, secondary, or special education teaching certificate.	L+L 3.0 3.0 3.0
EPD271AB	Essential Elements of Adolescent Reading and Writing Instruction 6-12	Focus on the theories, methods, and models of the essential elements needed to develop and improve reading and writing skills of adolescents.	Must hold a provisional or standard elementary, secondary or special education teaching certificate.	L+L 3.0 3.0 3.0
EPD272AA	Elements of Elementary Content Area Reading and Writing K-8	Focus on practical and effective methods and strategies for the teaching of reading and writing in the elementary content area based on research-based principles and theories.	Prerequisites: A grade of C or better in EPD270, EPD271AA and must hold a provisional or standard elementary, secondary, or special education teaching certificate.	L+L 3.0 3.0 3.0
EPD272AB	Elements of Adolescent Content Area Reading and Writing 6-12	Focus on practical and effective methods and strategies for the teaching of reading and writing in the adolescent content area based on research-based principles and theories.	Prerequisites: A grade of C or better in EPD270, EPD271AB and must hold a provisional or standard elementary, secondary or special education teaching certificate.	L+L 3.0 3.0 3.0
EPD273	Phonics Based K-12 Reading Diagnosis and Remediation	Methods of assessing, diagnosing, and remediating reading deficiencies in K-12 readers. Administration and analysis interpretation of formal and informal diagnostic assessments. Emphasis on Arizona state law and national literacy standard mandated research based systematic phonics instruction, remediation methods and techniques.	Prerequisites: A grade of C or better in EDU271 and must hold a provisional or standard elementary secondary or special education teaching certificate.	LEC 3.0 3.0 3.0
EPD274	Reading Assessment	Focus on Assessment Practices and Systems including administering assessments, data collection and analysis, diagnosing reading difficulties, developing student growth plans, and utilizing data to provide appropriate effective instruction to increase literacy success for all students.	Prerequisites: A grade of C or better in EPD270 and (EPD271AA or EPD271AB) and (EPD272AA or EPD272AB) and must hold a provisional or standard elementary, secondary, or special education teaching certificate.	L+L 6.0 6.0 6.0

EPD275	Diagnosis and Remediation of Reading K-12	Fundamentals of diagnosis and remediation of reading problems for K-12. Administration, analysis and interpretation of informal diagnostic procedures and use of assessment results in planning a program of remediation. The Diagnostic Teaching of Reading emphasized.	Prerequisites: A grade of C or better in EDU270AA or EDU270AB and must hold a provisional or standard elementary secondary or special education teaching certificate.	LEC 3.0 3.0 3.0
EPD276	The Teacher Leader	Focus on K-12 teachers' skills as recognized teacher leaders. Includes reading, summarizing, and analyzing current educational research and theory about the teacher leader. Examination of the effect of informal and formal roles of the teacher leader in the schools. Also covers discovery of personal philosophies of leadership and plans for enacting leadership within participant's own school sites.	Must hold a provisional or standard elementary, secondary, or special education teaching certificate.	L+L 3.0 3.0 3.0
EPD277AA	Reading Field Experience K-8	Focus on the practical application of current philosophical theories, methods, and models of assessment and instruction for remediation of reading.	Prerequisites: A grade of C or better in EPD270, EPD271AA, EPD272AA, EPD274, EPD276 and must hold a provisional or standard elementary, secondary, or special education teaching certificate.	L+L 3.0 3.0 3.0
EPD277AB	Reading Field Experience 6-12	Focus on the practical application of current philosophical theories, methods, and models of assessment and instruction for remediation of reading.	Prerequisites: A grade of C or better in EPD270, EPD271AB, EPD272AB, EPD274, EPD276 and must hold a provisional or standard elementary, secondary, or special education teaching certificate.	L+L 3.0 3.0 3.0
EPD279	Reading Practicum K-12	Focus on the practical application of current philosophical theories, methods, and models of assessment and instruction for remediation of reading.	Prerequisites: A grade of C or better in EDU270AA or EDU270AB and must hold a provisional or standard elementary secondary or special education teaching certificate.	L+L 3.0 4.5 4.5

EPD286	Middle Grade Practicum	Practical experience for teacher on-site at a middle grade school. Includes observing and working in a classroom, with teachers and with special needs students.	Prerequisites: A grade of C or better in EPD224 and (EPD248 or EDU274) and must hold a provisional or standard elementary or secondary education teaching certificate.	L+L 3.0 4.5 4.5
EPD287	Science, Technology, Engineering, and Mathematics Education (STEM) Education Capstone Project	Organized and tailored around completed coursework in Science, Technology, Engineering, and Mathematics (STEM) education. Structured to provide a capstone experience by providing opportunities for individualized research and study guided by professional expertise. Allows for best opportunities of independent study and individualized learning to maximize teacher development and knowledge in the STEM fields. Final project required. Includes a development plan for immediate classroom use with appropriate grade level lesson plans and activities, teaching strategies, and techniques in a STEM field.	Prerequisites: A grade of C or better in EPD256, EPD257, EPD258, and EPD259.	LEC 3.0 3.0 3.0
EPS150	Introduction to Entrepreneurship	Overview of entrepreneurship. Includes the entrepreneurial process and the skills required to be successful, including starting, planning, financing, marketing, and managing a business.	Prerequisites: None.	LEC 3.0 3.0 3.0
EPS151	Project-Based Entrepreneurship: Community Solutions	Practical experience in applying core entrepreneurial skills and knowledge in a real-world context including innovation and creativity exercises. Application of knowledge and skills from earlier coursework to develop and present solutions to real-world situations currently faced by Entrepreneurs, Community-Based Organizations, Civic or Government Organizations, or College Departments.	Prerequisites: A grade of C or better in EPS150 or permission of Instructor.	LEC 3.0 3.0 3.0

EPS152	Entrepreneurship Around the World	Experiential learning to develop and apply skills in intercultural communication, global etiquette, teamwork, business and entrepreneurship to solve challenges and collaborate with other students and entrepreneurs throughout the world.	Prerequisites: A grade of C or better in EPS150 or permission of Instructor.	LEC 3.0 3.0 3.0
EPS160	New Venture Creation	Process of starting a new venture including evaluating specific business opportunities identifying financing alternatives, and defining start-up issues.	Prerequisites: None.	LEC 2.0 2.0 2.0
EPS161	New Venture Law and Finance	Introduction to the principles of legalization and capitalization of a new business venture. Includes the processes required to organize, register, finance, launch and protect a business.	Prerequisites: None.	LEC 3.0 3.0 3.0
EPS162	Introduction to Social Entrepreneurship	Introduction to the history, theory, and emerging activities of social entrepreneurship. Includes management skills for social entrepreneurial organizations, scaling of social impact, and social performance measurement. Emphasis on social capital, microfinance, and evaluation of social entrepreneurial opportunities.	Prerequisites: None.	LEC 3.0 3.0 3.0
EPS165	New Venture Feasibility Analysis	Introduction to the industry's market and competitive structure. Includes the technical skills to develop a competitive strategy for entry into the business segment. Covers the market potential evaluation, niche identification, analysis of competition, and development of customer profiles. Also involves development of a marketing strategy and sales projections for new business ventures.	Prerequisites: None.	LEC 2.0 2.0 2.0

EPS180	Technology Business Planning	Fundamentals of identifying new technologies and innovations for profitable commercial feasibility. Determination of capabilities, resources, and interests of the entrepreneur. Evaluation and selection of technology opportunities. Creation of business concept and plan. Customer development and business models. Finances, venture capital and accounting. Marketing and sales. Legal formation and intellectual property. Operations and resource management. Growth, harvest and success.	Prerequisites: None.	LEC 3.0 3.0 3.0
EPS195	Business Start-Up and Planning	Development of a feasibility approach to strategic decision making concerning new venture start-up. Includes development of a business feasibility study and a preliminary business plan.	Prerequisites: None.	LEC 2.0 2.0 2.0
EQS105	Principles of Equine Science	Breeds, colors and markings; horse selection; basic conformation; form to function; structures of the hoof; footfall sequences; vision, managed health program; nutrition principles and management practices.	Prerequisites: None.	LEC 3.0 3.0 3.0
EQS120	Equine Anatomy and Physiology	Study of structure and function of the equine. Includes cell structure, anatomy and physiology of major systems with emphasis on skeletal, muscular, and digestive systems. Incorporates detailed discussion and identification of various anatomical parts.	Prerequisites: A grade of C or better in EQS105 or permission of Department or Division.	L+L 4.0 6.0 6.0
EQS130	Equine Business and Law	Practices and records used in the equine business. Includes record keeping systems and basic accounting principles; taxes; personnel management practices; computer programs for record keeping and operations management. Addresses legal aspects and laws unique to equine businesses.	Prerequisites: None.	LEC 3.0 3.0 3.0

EQS140	Equine Behavior	Equine behavior modification using the horse's natural behavior patterns. Emphasis on intelligence level, vision, emotions, hearing, and attention span of the horse.	Prerequisites: A grade of C or better in EQS105 or permission of Department or Division.	LEC 3.0 3.0 3.0
EQS145	Basic Horsemanship	Rudimentary knowledge concerning horse handling safety, basic riding equipment, grooming techniques, saddling, bridling, mounting, dismounting, and basic control of the horse at the walk and trot. English or western equipment used. Emphasis on position of rider as it relates to basic control of the horse	Prerequisites: None.	L+L 3.0 6.0 6.0
EQS160	English Horsemanship I	Basic ground work and safety procedures; control of the horse at the walk, trot, and canter; rider position and use of fundamental aids	Prerequisites: None.	L+L 3.0 3.0 3.0
EQS162	Equine and Stable Management I	Focus on daily stable operations in the care and management of horses. Practical experience in basic horse husbandry, horsemanship, and stable management. Development of ground handling skills and use of lunge line and round penning techniques. Topics include feeding, watering, stable sanitation, grooming, bathing, vaccines, parasite control, safety, horse behavior, health, wounds and their treatments, and record keeping.	Prerequisites: None.	L+L 2.0 4.0 4.0

EQS162VT	Equine Management for the Veterinary Technician	A hands-on introduction to daily stable operations in the care and management of horses. Practical experience with various assigned horses in basic horse husbandry, horsemanship, and stable management. Development of ground handling skills during various activities related to the care of horses. Effective use of lunge line and round penning techniques. Topics include feeding, watering, stable sanitation, grooming, bathing, lameness exams, vaccines, blood draws, parasite control, safety, horse behavior, health, wounds and their treatments, veterinary forms and recordkeeping.	Prerequisites: Veterinary Technician student currently enrolled in Mesa Community College (MCC) Veterinary Technology Program or student currently enrolled in Scottsdale Community College (SCC) Equine Science Program on track with Mesa Community College (MCC) Veterinary Technology Program upon graduation from SCC.	L+L 2.0 4.0 4.0
EQS165	Western Horsemanship I	Basic ground work and safety procedures; control of the horse at the walk, jog, and lope; rider position and use of fundamental aids	Prerequisites: None.	L+L 3.0 3.0 3.0
EQS175	Introduction to Equine Therapies	Designed to acquaint students with equine therapies for major muscle groups, the skeletal system and the hoof of the horse. The relationship that exists between the listed systems, equine locomotion and lameness problems will be discussed. Discussion, demonstration, and/or practical hands-on opportunities of equine therapy techniques will be focus of the class.	Prerequisites: None.	L+L 3.0 6.0 6.0
EQS180	English Horsemanship II	Increase control, balance, form and finesse in the balanced seat style of English riding. Emphasis on developing the rider's ability to apply precise, prompt, smooth aids, and attain harmony with the horse through use of "body language."	Prerequisites: A grade of C or better in EQS160 or permission of Department or Division.	L+L 3.0 3.0 3.0
EQS185	Western Horsemanship II	Refinement of basic riding skills; weight, leg, and rein aids; gathering and checking; two-track; trail obstacles; simple change of lead; elements of a Western riding pattern.	Prerequisites: A grade of C or better in EQS165 or permission of Department or Division.	L+L 3.0 3.0 3.0



EQS200	Principles of Equine Nutrition	Basic principles of equine nutrition and digestion. Proper selection, evaluation and utilization of feeds as well as the feeding and care of the equine in various stages of production, growth and performance. Emphasis on nutrient content and ration evaluation, general health and feed management. Identifies specific nutritional needs of each class of equine and formulates feeding programs based on these specific needs.	Prerequisites: A grade of C or better in (EQS105 and EQS120) or permission of Department or Division.	LEC 3.0 3.0 3.0
EQS205	Equine Genetics, Selection, Development	Introduction to genetics as applied to selection of breeding animals. Emphasis on phenotypic selection and foal development	Prerequisites: A grade of C or better in EQS120 or permission of Department or Division.	LEC 3.0 3.0 3.0
EQS215	Feeding Programs for Production and Performance	Explores the feeding and care of the equine in various stages of production, growth and performance. Identifies specific nutritional needs of each class of equine and formulates feeding programs based on these specific needs	Prerequisites: A grade of C or better in EQS200 or permission of Department or Division.	LEC 3.0 3.0 3.0
EQS220	Equine Reproduction	Reproductive anatomy and physiology; care and management of the breeding stallion; breeding procedures and artificial insemination. Care of pregnant mare; foaling procedures	Prerequisites: A grade of C or better in EQS105 or EQS120 or permission of Department or Division.	LEC 3.0 3.0 3.0
EQS225	Equine Health and Disease Management	Aspects of equine health and disease prevention. Emphasis on preventive maintenance. Preventive medicine and necessary managerial practices needed to keep the equine athlete, broodmare, or family horse in good health	Prerequisites: A grade of C or better in (EQS105 and EQS120) or permission of Department or Division.	LEC 3.0 3.0 3.0

EQS235	English Horsemanship and Training	Riding skills and training techniques for the English horse. Includes review of basic horsemanship skills, lateral bend and vertical flexion, halt, rein back, leg yield, counter canter, simple and flying change of leads, mental preparation for shows and the judging criteria for various performances	Prerequisites: None.	L+L 3.0 3.0 3.0
EQS245	Western Horsemanship and Training	Riding skills and training techniques for the western horse. Includes review of basic horsemanship skills, stopping, backing, two track, simple and flying lead changes, turns on the forehand and hindquarters, rating speed collection, western riding patterns and horse show preparation	Prerequisites: None.	L+L 3.0 3.0 3.0
EQS250	Equine Evaluation	Fundamental relationship between good conformation and ability of the horse to remain sound and useful. Includes basic skeletal structure, common blemishes and evidence of unsoundness. Breed conformation standards and performance events for the more common breeds.	Prerequisites: A grade of C or better in (EQS105 and EQS120) or permission of Department or Division.	L+L 3.0 6.0 6.0
EQS264	Equine and Stable Management II	Advanced practical experience in horse and stable management. Practical and supervisory experience in daily stable operations that increase skill and knowledge level in the care and management of horses. Topics include nutrition, diseases and their prevention, environmental issues parasite, pests and rodent control, safety, horse handling, wounds and their treatments, injury and treatments, inventory control, record keeping, and industry-standard operating procedures.	Prerequisites: A grade of C or better in (EQS162 or EQS162VT) or permission of Department or Division.	L+L 4.0 4.0 4.0

EQS270	Teaching Techniques in Horsemanship	Theory and principles in teaching horsemanship and developing a public lesson program. Emphasis on developing a lesson plan, communication and public relations skills; horse and rider problem analysis; and methods of group control	Prerequisites: A grade of C or better in EQS105 and EQS145 and (EQS160 or EQS165) or permission of Department or Division.	L+L 3.0 4.0 4.0
EQS275	Equine Lameness	A continuing study of equine skeletal anatomy with emphasis on the normal function of front and hind legs and the hoof. Covers methods of evaluating various deviations that present as lameness in horses; how conformation, gait, and lameness relate to performance, physical and behavior issues; the protocol of equine gait assessments on actual horses; and how to diagram the footfalls of the horse. Topics include the body's response to injury, forms of therapy, types of conditioning, and rehabilitative techniques for returning horses to usefulness and performance.	Prerequisites: A grade of C or better in (EQS105, EQS120, and EQS250) or permission of Department or Division.	L+L 4.0 6.0 6.0
EQS280	Equine Science Internship	Equine industry work experience at faculty approved site. Focus of internship is immersion in an area of interest in or related to equine industry.	Prerequisites: A grade of C or better in (EQS120 and (EQS162 or EQS162VT)), or permission of Department or Division.	LAB 3.0 15.0 0.0
EQS283	Special Event Internship	Hands-on career track experience before, during and after a major equine event. Emphasis on event coordination and management issues.	Prerequisites: A grade of C or better in EQS105 or permission of Department or Division.	LAB 1.0 2.0 0.0
EQS284	Teaching Techniques Internship	Short term in-depth participation assisting with the organization and methods of instruction for an Equine Science horsemanship class.	Prerequisites: A grade of C or better in EQS270 plus an assessment of horsemanship skills.	LAB 1.0 5.0 0.0
EQS285	Equine Science Practicum	Equine industry work experience at faculty approved site.	Prerequisites: EQS120 and (EQS162 or EQS162VT).	LAB 2.0 10.0 0.0
EQS294	Special Topics in Equine Science	Exploration of special topics related to Equine Science and Equine Management with an emphasis on current issues.	Prerequisites: None.	L+L 3.0 4.0 4.0

EQS294AA	Special Topics in Equine Science	Exploration of special topics related to Equine Science and Equine Management with an emphasis on current issues.	Prerequisites: None.	LEC 2.0 2.0 2.0
EQS294AB	Special Topics in Equine Science	Exploration of special topics related to Equine Science and Equine Management with an emphasis on current issues.	Prerequisites: None.	LEC 1.0 1.0 1.0
EQS294AC	Special Topics in Equine Science	Exploration of special topics related to Equine Science and Equine Management with an emphasis on current issues.	Prerequisites: None.	LEC 0.5 0.5 0.5
EQS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
EQS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

EQS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
EQS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
EQS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

EQS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
EQS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ESL001	Basic English as a Second Language I	Listening, speaking, reading, and writing in English at a basic level. Focus on survival skills related to life in the United States. Introduction to elementary grammatical patterns	Prerequisites: None.	LEC 6.0 6.0 6.0
ESL002	Basic English as a Second Language II	Listening, speaking, reading, and writing in English at a high beginning level. Focus on survival skills related to life in the United States. Continuing development of grammatical patterns.	Prerequisites: A grade of C or better in ESL001 or permission of Instructor.	LEC 6.0 6.0 6.0
ESL002BA	Basic ESL II: Personal Health and Safety	Listening, speaking, reading, and writing English at a high beginning level. Focus on survival skills related to personal health and safety when living in the United States. Continuing development of grammatical patterns.	Prerequisites: A grade of C or better in ESL001 or permission of Instructor.	LEC 2.0 2.0 2.0

ESL002BB	Basic ESL II: Services and Employment	Listening, speaking, reading, and writing English at a high beginning level. Focus on survival skills related to services and employment when living in the United States. Continuing development of grammatical patterns.	Prerequisites: A grade of C or better in ESL002BA or permission of Instructor.	LEC 2.0 2.0 2.0
ESL002BC	Basic ESL II: Shopping and Everyday Life	Listening, speaking, reading, and writing English at a high beginning level. Focus on survival skills related to shopping and everyday life when living in the United States. Continuing development of grammatical patterns.	Prerequisites: A grade of C or better in ESL002BB or permission of Instructor.	LEC 2.0 2.0 2.0
ESL010	English as a Second Language I: Grammar	First level of English as a Second Language (ESL). Emphasis on basic conversational skills, pronunciation, vocabulary building and grammar. Some reading and sentence level writing.	Appropriate ESL placement test score.	LEC 3.0 3.0 3.0
ESL011	English as a Second Language I: Listening and Speaking	Emphasis on listening and speaking skills involving survival skills. Asking and answering questions related to work, shopping, and personal safety.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL002.	LEC 3.0 3.0 3.0
ESL012	ESL I-Writing with Oral Practice	Emphasis on basic conventions of writing in English. Includes introduction to the alphabet, capitalization, punctuation, and simple sentence structure.	Appropriate ESL placement test score or permission of Instructor.	LEC 3.0 3.0 3.0
ESL013	Vocabulary for ESL I	Emphasis on the acquisition of basic English vocabulary including identifying and pronouncing words related to people, medical/dental care, occupations and other activities.	Prerequisites: Appropriate ESL placement test score or permission of Instructor.	L+L 1.0 1.0 0.0
ESL016	Reading English as a Second Language I	Designed for students who are learning English as a second language. Skills needed to become proficient readers in English. Sound symbol relationships of the English alphabet. Essential vocabulary for daily communication both in isolation and context. Development of reading comprehension skills.	Appropriate ESL placement test score.	LEC 3.0 3.0 3.0

ESL020	English as a Second Language II: Grammar	Second level of English as a Second Language (ESL). Continued emphasis on conversational skills, pronunciation, vocabulary building and grammar with some reading and sentence level writing.	Prerequisites: Appropriate ESL placement test score or a grade of P or C or better in ESL010.	LEC 3.0 3.0 3.0
ESL021	English as a Second Language II: Listening and Speaking	Emphasis on listening and speaking skills involving social exchange. Asking and answering questions, using tag questions. Practice with question and answer patterns. Polite questions and responses.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL010 or ESL011 or ESL012 or RDG010.	LEC 3.0 3.0 3.0
ESL022	ESL II-Writing with Oral Practice	Emphasis on basic writing skills, accompanied by recitation of short writings. Sentence patterns and introduction of paragraph writing.	Prerequisites: Appropriate ESL course placement score or a grade of C or better in ESL012 or permission of Instructor.	LEC 3.0 3.0 3.0
ESL023	Vocabulary for ESL II	Emphasis on the acquisition of basic English vocabulary including identifying and pronouncing words related to people, medical/dental care, occupations and other activities.	Appropriate ESL placement test score or permission of Instructor.	L+L 1.0 1.0 0.0
ESL026	Reading English as a Second Language II	Designed for students who are learning English as a second language. Continued development of vocabulary and reading comprehension skills.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL/RDG016 or permission of Instructor.	LEC 3.0 3.0 3.0
ESL030	English as a Second Language III: Grammar	Third level of English as a Second Language (ESL). Emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice.	Prerequisites: Appropriate ESL placement test score or a grade of P or C or better in ESL020.	LEC 3.0 3.0 3.0
ESL031	English as a Second Language III: Listening and Speaking	Emphasis on listening and speaking skills related primarily to the academic environment. Asking questions, working in small groups, using college resources, informal oral presentation.	Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL020, or ESL021, or ESL022, or ESL/RDG026.	LEC 3.0 3.0 3.0
ESL032	ESL III-Writing with Oral Practice	Emphasis on complex sentence patterns in writing and speech. Introduction to the prewriting and writing process in a college setting.	Prerequisites: Appropriate ESL course placement score or a grade of C or better in ESL022 or permission of Instructor.	LEC 3.0 3.0 3.0



ESL033	Vocabulary for ESL III	Emphasis on the acquisition of basic English vocabulary including identifying and pronouncing words related to people, medical/dental care, occupations and other activities.	Prerequisites: Appropriate ESL placement test score or permission of Instructor.	L+L 1.0 1.0 0.0
ESL036	Reading English as a Second Language III	Designed for students who are learning English as a second language. Instruction for more advanced vocabulary and reading comprehension skills.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL/RDG026 or permission of Instructor.	LEC 3.0 3.0 3.0
ESL040	English as a Second Language IV: Grammar	Fourth-level of English as a Second Language (ESL). Continued emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice.	Prerequisites: Appropriate ESL placement test score or a grade of P or C or better in ESL030.	LEC 3.0 3.0 3.0
ESL041	English as a Second Language IV: Listening and Speaking	Emphasis on academic skills. Listening to lectures, notetaking, peer interaction, accessing and using media resources, formal oral presentations.	Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL030, or ESL031, or ESL032, or ESL/RDG036.	LEC 3.0 3.0 3.0
ESL042	ESL IV-Writing with Oral Practice	Emphasis on paragraph writing and oral recitation of complex sentences and paragraphs. Introduction to the prewriting and writing process for short essays.	Prerequisites: Appropriate ESL course placement score or a grade of C or better in ESL032 or permission of Instructor.	LEC 3.0 3.0 3.0
ESL046	Reading English as a Second Language IV	Developed for students of English as a second language. Development of advanced vocabulary, comprehension skills, and culture awareness.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL/RDG036 or permission of Instructor.	LEC 3.0 3.0 3.0
ESL049	General Vocational English as a Second Language	General English speaking, listening, reading, and writing skills needed for use at work.	Prerequisites: Appropriate ESL placement test score, or a grade of "C" or better in ESL010, or permission of Instructor.	LEC 3.0 3.0 3.0
ESL050	Review Grammar For ESL	Review of grammatical concepts for ESL (English as a Second Language) students who have some previous experience in reading and writing English. Appropriate for students who want to practice sentence skills in English.	Prerequisites: Appropriate ESL course placement score or a grade of C or better in ESL040 or permission of Instructor.	LEC 3.0 3.0 3.0

ESL050AA	Basic Review Grammar for ESL	Review of the use of English verbs and word placement in sentences for ESL (English as a Second Language) students who have some previous experience in reading and writing English. Appropriate for students who want to practice sentence skills in English.	Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL010 or permission of Instructor.	L+L 1.0 1.0 0.0
ESL050AB	Intermediate Review Grammar for ESL	Review of auxiliary verbs and the comparative and superlative for ESL (English as a Second Language) students who have some previous experience in reading and writing English. Appropriate for students who want to practice sentence skills in English.	Prerequisites: Appropriate ESL placement test score, or a grade of "C" or better in ESL020, or permission of Instructor.	L+L 1.0 1.0 0.0
ESL050AC	Advanced Review Grammar for ESL	Review of verbals and gerunds for ESL (English as a Second Language) students who have some previous experience in reading and writing English. Appropriate for students who want to practice sentence skills in English.	Prerequisites: Appropriate ESL placement test score, or a grade of "C" or better in ESL030, or permission of Instructor.	L+L 1.0 1.0 0.0
ESL051	Pronunciation Improvement for ESL Speakers	Individualized pronunciation practice and drills for English as a second language (ESL) speakers.	Prerequisites: Appropriate ESL course placement score, or a grade of C or better in (ESL020, or ESL021, or ESL022, or ESL/RDG026), or permission of Instructor.	LEC 3.0 3.0 3.0
ESL054	American Culture	Reading and writing about American culture including history, institutions and sports, and entertainment.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL040 or ESL/RDG046 or permission of Instructor.	LEC 3.0 3.0 3.0
ESL054AA	American Culture: History	Reading and writing about American history.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL040 or ESL/RDG046 or permission of Instructor.	L+L 1.0 1.0 0.0

ESL054AB	American Culture: Institutions and Customs	Reading and writing about American cultural institutions and customs.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL040 or ESL/RDG046 or permission of Instructor.	L+L 1.0 1.0 0
ESL054AC	American Culture: Sports and Entertainment	Reading and writing about American sports and entertainment.	Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL040 or ESL/RDG046 or permission of Instructor.	L+L 1.0 1.0 0
ESL061	Informal Conversational and Written English for Non-native Speakers	Practice speaking and writing English in informal settings. Emphasis on friendly conversational techniques and effective use of the computer and the Internet to communicate in a friendly, relaxed manner.	Prerequisites: Appropriate ESL placement test score or a grade of P or C or better in ESL020 or ESL021 or ESL022 or RDG020.	LEC 3.0 3.0 3.0
ESL071	Advanced Pronunciation and Oral Reading for ESL	Pronunciation practice and review, spelling of English sounds, and oral reading for stress and intonation patterns in English.	Prerequisites: A grade of C or better in ESL051 or permission of Instructor.	LEC 3.0 3.0 3.0
ESL077	Preparatory Academic Writing I for ESL	Emphasizes preparation for college level composition and related reading tasks with a focus on communicating through complete, grammatically correct writing, organized to communicate a central idea.	Prerequisites: Appropriate writing placement test score or permission of Department or Division.	LEC 3.0 3.0 3.0
ESL087	Preparatory Academic Writing II for ESL	Emphasizes preparation for college-level composition and related reading tasks with a focus on critical writing, reading, and thinking skills and processes.	Prerequisites: Appropriate writing placement test score or a grade of C or better in ESL077 or ENG071 or permission of Department or Division.	LEC 3.0 3.0 3.0
ESL097	Preparatory Academic Writing III for ESL	Emphasizes preparation for first year composition with a focus on critical writing, reading, and thinking skills and processes at an increased level of academic complexity.	Prerequisites: Appropriate writing placement score, or a grade of C or better in ESL087 or ENG081, or permission of Department or Division.	LEC 3.0 3.0 3.0

ESL298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ESL298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ESL298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

ESP160	CAMT Career Labs	Certificate for Apartment Maintenance Technicians (CAMT) Career Labs harnesses a growth mindset methodology and cohort model to rapidly build a strong community of learners. The course draws from a core series of modules specific to customer-facing roles and helps new and entry-level employees gain and practice key professional skills that they can immediately apply to their work. Through highly engaging group activities and work simulations, participants build a supportive cohort and learning community, and together address skills gaps that often prevent success in the workplace. The course focuses on developing effective communication, collaborating to reach shared goals, examining how one's experiences and values shape personal and work habits, thinking critically about problems and solutions, managing time appropriately, and developing professional portfolios.	Prerequisites: None.	48
ESS101	Introduction to Employment Support	Roles and responsibilities of the Employment Support Specialist. Philosophy and values of employment support systems. Procedures and practices for establishing relationships with trainees, identifying suitable employment and assisting the trainee in learning the job for job acquisition	Prerequisites: None.	LEC 3.0 3.0 3.0

ESS103	Employment Support Systems Practices	Specific characteristics and safety requirements for developmental, physical and serious mental illness disabilities. Skills and techniques for Employment Support Specialists to assist trainees after employment acquisition. Responsibilities and on-the-job application in the employment setting including orientation, task/job analysis, training "assists", data collection and documentation	Prerequisites: A grade of C or better in ESS101 or permission of Department or Division.	L+L 3.0 5.0 5.0
ESS110	Americans with Disabilities Act Overview	Titles of Americans with Disabilities Act regulations and requirements including employment, transportation, accessibility, community awareness and assertive technology	Prerequisites: None.	LEC 2.0 2.0 2.0
ESS111	Disability Examiner Services: Level I	Application of the purpose and scope of the Social Security Disability program. Knowledge and skills to apply for standard office policies and procedures, the determination process, civil right/privacy guidelines, relationships with other referring agencies, and legal roles and responsibilities of evidence procedures. Application of medical terminology, case management, and communication techniques.	Current employment with Arizona Department of Economic Security Disability Determination Services Administration Bachelor's degree preferred but not required.	L+L 3.0 3.0 0.0
ESS112	Disability Examiner Services: Level II	Application of the computer system functions and programs of the Social Security Disability program. Knowledge and skills to apply for application process, case files, databases and other informational sources.	Current employment with Arizona Department of Economic Security Disability Determination Services Administration Bachelor Degree preferred but not required.	L+L 3.0 3.0 0.0

ESS113	Disability Examiner Services: Level III	Introduction to the medical terms used in the Social Security Disability Program using a body systems approach to selected terms related to structures, functions, diseases, procedures, and diagnostic tests; building and analyzing terms using basic word parts; selected medical abbreviations and symbols and spelling of terms.	Current employment with Arizona Department of Economic Security Disability Determination Services Administration Bachelor's degree preferred but not required.	L+L 3.0 3.0 0.0
ESS114	Disability Examiner Services: Level IV	Application and use of decision notices in Social Security Disability case determinations including the use of the various types of adjudication and determination forms. Ordering and prioritization of cases and management of cases from initiation to completion through principles of effective caseload management. Management of claim denial, proper use of system codes, and client referrals.	Current employment with Arizona Department of Economic Security Disability Determination Services Administration Bachelor's degree preferred but not required.	L+L 3.0 3.0 0.0
ESS115	Disability Examiner Services: Level V	Application of eligibility requirements and the appropriate use of disability determination tools including manuals, handbooks, and computer software. Principles of claims management and the use of specific forms and computer software. Application of specific disability determination techniques such as the Chavez Acquiescence Ruling, Residual Functional Capacity (RFC) assessments, and claim rationale requirements such as the concept of threshold in adjudication. Practical experience closing live cases and writing decision notices.	Current employment with Arizona Department of Economic Security Disability Determination Services Administration Bachelor's degree preferred but not required.	L+L 3.0 3.0 0.0

ESS116	Disability Examiner Services: Level VI	Advanced application of the medical terms used in healthcare using a body systems approach to selected terms related to structures, functions, diseases, procedures, and diagnostic tests. Emphasis on advanced terminology used in determining Social Security Disability including the use of medical abbreviations, symbols and spelling of terminology.	Current employment with Arizona Department of Economic Security Disability Determination Services Administration Bachelor's degree preferred but not required.	L+L 3.0 3.0 0.0
EST101	Aesthetic Orientation	Program orientation provides the knowledge needed to succeed in the Aesthetics program, and includes topics such as ethics, sanitation, Arizona state law, and other fundamentals of the aesthetics business.	Prerequisite: Admission to the Aesthetics program.	6
EST103	Facial Basics	As students begin their training in aesthetics, they will begin to develop and demonstrate proficiencies in effective client communication, interpersonal skills, and will learn how to deliver an effective skin care facial treatment and client pre and post consultations. Topics will also include sanitation, Arizona laws, client care, and facial care.	Prerequisites: EST101 or Program Manager's permission.	96
EST104	Advanced Facials	This course covers advanced aesthetic modalities such as microdermabrasion, chemical peels, and dermaplaning. Students will also learn skin physiology, skin disorders, and cosmetic chemistry as it applies to ingredient and product knowledge. This course also covers working in the medical field, proper client documentation and consultation as it applies to advanced treatments as well as proper pre and post care and the importance of consent forms.	Prerequisites: EST103 or Program Manager's permission.	99



EST105	Facial Modalities	Students will learn the theory and applications of electrotherapy in aesthetics used to address various skin conditions and client concerns. This course covers how contraindications and various facial machines fit into protocols. Modalities covered include galvanic current, ultrasonic, Tesla current, and microcurrent. Students will also continue to develop client communication, documentation, and professional and personal skills.	Prerequisites: EST104 or Program Manager's permission.	99
EST106	Facial Clinic	Students will apply all of the theory and practical knowledge from the previous courses through facial services to the public. Students will develop a customized protocol for each client, as well as properly documenting treatments, and following all sanitation and Arizona laws. Students will also develop and recommend the proper home care products and retail them to their clients.	Prerequisites: EST105 or Program Manager's permission.	50
EST150	Hair Removal Methods/Makeup Application	Students will learn the theory and application of hard and soft wax, contraindications for hair removal, as well as hair removal for the body and face as well as brow shaping and tinting. Students will also learn proper and sanitary makeup applications for day time, night time and special occasions. Topics will include hair growth cycles, different methods of hair removal, color theory, types of makeup and client consultations, documentation and client bookings.	Prerequisites: EST106 or Program Manager's permission.	100

EST151	Spa Treatments	Topics in this course will include aromatherapy, spa modalities, anatomy, business basics and business ownership. Students will learn and be able to identify facial muscles as well as perform body scrubs, wraps and various other spa treatments. Students will continue to develop effective communication and consultation skills. Students will also practice for the state board practical examination.	Prerequisites: EST150 or Program Manager's permission.	100
EST152	Spa Treatment Clinic	Students will apply the theory and hands-on knowledge they have acquired in the previous courses by providing waxing and spa treatment services to the public. Students will conduct both pre and post consultations, follow all sanitation and Arizona laws, as well as recommend home care and follow up with clients. Students will continue to develop complex protocols and problem solving techniques and effective communication skills.	Prerequisites: EST151 or Program Manager's permission.	50
ETL102	Educational Application of Technology	Principles and practice of using technological tools for teaching across the curriculum. Designed for 21st Century teaching and learning.	Prerequisites: None.	LEC 1.0 1.0 1.0
ETL211AA	Curriculum Mapping and Instructional Design	Emphasis on outcome-based decisions to improve teaching and learning through the use of curriculum mapping, conceptual framework, and content alignment. Includes mapping thematic units, defining critical thinking, writing measurable objectives, and aligning course materials and assessments to learning objectives.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
ETL211AB	Outcomes-Based Learning and Informative Assessment	Overview of the informative assessment process. Includes rationale for ongoing outcomes-based decisions to improve teaching and learning.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0

ETL211AC	Lesson Design and Delivery	Emphasis on theoretical foundations of good teaching. Includes lesson design and delivery based on effective learning strategies and best instructional practices.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
ETL220	Online Teaching and Learning I	Application of and experience using an online teaching and learning environment from a student's perspective to inform the design and support of an online course environment. Application and evaluation of online learning principles and tools for teaching and learning. Identification and development of online facilitation knowledge and skills. Introduction to the best practices in content building, course design and delivery.	Prerequisites: Permission of Instructor.	LEC 3.0 3.0 3.0
ETL221	Online Teaching and Learning II	Experience with creating an online or hybrid duplicative course module structure in an online teaching and learning environment using evidence-based practices in course design. Develop learning objectives and module map based on curricular principles. Using instructional design techniques develop and align materials, activities, assignments and assessments to learning objectives. Discuss and develop active learning strategies for presenting content, facilitating discussions, creating assignments and administering assessments in the online environment.	Prerequisites: A grade of C or better in ETL220 or permission or Instructor.	LEC 3.0 3.0 3.0
ETL287	Teaching and Learning Seminar	Emphasis on enhancing teaching and learning through readings, discussions, presentations and synthesis of literature related to a selected topic relevant to current issues in higher education.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
EUT101	Introduction to Utilities	Entry level exploration of how electricity is generated and transferred to the utility customer, including the political and social issues related to overhead powerlines.	Prerequisites: None.	LEC 2.0 2.0 2.0

EUT102	Utilities: Fitting It All Together	Overview of equipment, tools and machinery needed to perform specific tasks in the utility industry. Tasks include but are not limited to pole loading as it pertains to weight, transformer loading as it pertains to electrical load, and transformer selection per application.	Prerequisites: None.	LEC 2.0 2.0 2.0
EUT103	Introduction to Rigging	Basic fundamentals of overhead rigging. Topics covered include elements of safe rigging, rope, knots and knot tying, use of a handline, and use of blocks and tackle. Exploration of variety approaches to basic rigging tasks.	Prerequisites: [A grade of B or better in (MAT055, MAT056, and MAT057), or a grade of B or better in MAT09+, or appropriate district placement into MAT122], and a grade of C or better in ENG091, or ESL097, or appropriate district placement into ENG101.	LEC 2.0 2.0 2.0
EUT104	Equipment Safety and Operation	Operation and maintenance of equipment used in the utility industry. Identification and inspection of the major mechanical operations of equipment, as well as performance of pre-trip inspections on utility equipment. Emphasis on safety operations.	Prerequisites: None.	L+L 2.0 2.0 2.0
EUT105	Introduction to Pole Climbing	Proper climbing techniques for new climbers. Inspection and maintenance of pole climbing equipment, the equipment used in pole climbing, and how to maintain it.	Prerequisites: None.	LAB 1.0 1.0 1.0
EUT110	Line Work I	Overview of line work industry including its history, technological developments and current practices. Examines industry equipment and tools. Focuses on safety practices and procedures used in utility line work industry	Prerequisites: None.	LEC 2.0 2.0 2.0
EUT111	Meter Technology I	Provide students an entry level explanation of the fundamentals of meter technology as it relates to electrical metering.	Prerequisites: None. Corequisites: EUT116.	L+L 4.0 4.0 4.0

EUT112	Basic Electricity: AC and DC	Reviews the basic principles of Alternating Current (AC) and Direct Current (DC) electricity. Examines the structure and function of AC and DC circuits including series, parallel and series-parallel circuits. Includes an overview of electric systems and their applications in the utility industry.	Prerequisites: A grade of C or better in or EUT110 and (EUT115 or CAD101) or Corequisites: EUT110 and (EUT115 or CAD101).	L+L 4.0 4.0 4.0
EUT115	Training I	Practice in the basics of climbing and working on utility poles. Focuses on apparatus and equipment, using ropes and rigging equipment, installations of single and double cross arms, pole framing and setting, use of hand line and building single-phase lines.	Prerequisites: A grade of C or better in EUT110 and EUt112 or Corequisites: EUT110 and EUT112.	L+L 4.0 12.0 12.0
EUT116	Meter Technology Lab I	Provide students an entry level explanation of the fundamentals of meter technology as it relates to electrical metering. Introduction to basic installation, safety procedures, preventative maintenance, and testing of the self-contained watt-hour meter.	Prerequisites: None. Corequisites: EUT111.	L+L 6.0 18.0 18.0
EUT130	CAD for Electric Utility Technology I	Provides classroom experience using knowledge of underground utility circuitry and experience integrating Computer Aided Drafting	Prerequisites: A grade of C or better in EUT211 AND CAD164.	LEC 3.0 2.0 2.0
EUT210	Line Work II	Overview of line work industry including its history, technological developments and current practices. Examines industry equipment and tools. Focuses on hot sticking, tag out and lock out procedures with emphasis on industry safety practices and procedures	Prerequisites: A grade of C or better in EUT110.	LEC 2.0 2.0 2.0
EUT211	Electrical Apparatus	Overview of transformers and how they operate. Reviews single and three-phase theory. Focuses on construction and hook-up of single-phase, three- phase, open Y and Delta transformer connections. Presents an overview of surge arresters, including applications and installation.	Prerequisites: A grade of C or better in EUT110, EUT112 and (EUT115 OR CAD101). Corequisites: EUT215 or CAD164.	L+L 4.0 4.0 4.0

EUT212	Meter Technology II	Provide students an in depth level of understanding the fundamentals of meter technology as it relates to installation, testing, troubleshooting and maintenance of electrical metering.	Prerequisites: A grade of C or better in EUT110, EUT111 and EUT116. Corequisites: EUT210 and EUT216.	LEC 4.0 4.0 4.0
EUT215	Training II	Practice in the installation of electrical lines including transformers, reclosers, and service loops. Teaches rubber gloving, hot sticking techniques, and trenching of underground lines. Practice in the safe set-up and operation of equipment used in the line industry with a focus on the development of entry-level skills as drivers and operators. Includes procedures and practice in pole-top and bucket-truck rescues.	Prerequisites: A grade of C or better in EUT110, EUT112, and EUT115. Corequisites: EUT211.	L+L 4.0 12.0 12.0
EUT216	Meter Technology Lab II	Advanced procedures in the physical aspects of the watt-hour and poly phase meters as used in the test lab. Installation, safety procedures, preventative maintenance, testing, troubleshooting procedures and repairs of the self-contained watt-hour meter	Prerequisites: A grade of C or better in EUT110 EUT111 and EUT116 Corequisites: EUT210 and EUT212.	L+L 6.0 18.0 18.0
EUT230	CAD for Electric Utility Technology II	Provides classroom experience using knowledge of overhead utility circuitry and experience integrating Computer Aided Drafting	Prerequisites: A grade of C or better in EUT130.	LEC 3.0 2.0 2.0
EXS101	Introduction to Exercise Science	Introductory course that will provide the student with a general overview of the key theories and concepts, professions, and research areas associated with the field of Exercise Science. Educational pathways and career options will also be examined.	Prerequisites: None.	LEC 3.0 3.0 3.0

EXS112	Professional Applications of Fitness Principles	Basic principles of fitness for the prospective fitness professional and characteristics of quality communication and fitness leadership. Topics include behavior modification, enhancing motivation components of fitness, fitness assessment, risk stratification, exercise programming and modifications.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS123	Active for Life	Uses a variety of behavior change strategies to help fit physical activity into a busy schedule. Addresses the root causes of physical inactivity and focuses on the skills needed to establish a lifelong habit of physical activity	Prerequisites: None.	L+L 2.0 4.0 4.0
EXS125	Introduction to Exercise Physiology	Principles of exercise science applied to fitness instruction. Major factors related to the function of the human body will be examined/introduced with an emphasis on exercise physiology and functional anatomy.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: EXS101 or permission of Instructor.	LEC 3.0 3.0 3.0
EXS130	Strength Fitness-Physiological Principles and Training Techniques	Principles and techniques of strength training including strength physiology, performance factors, training recommendations, exercise techniques, and program design and management.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS132	Cardiovascular Fitness: Physiological Principles and Training Techniques	Covers principles and techniques of aerobic training and the application of these to the development of aerobic training programs. Includes instructional techniques and safety, and stresses injury prevention.	Prerequisites: None.	L+L 3.0 3.0 3.0
EXS138	Starting Your Own Personal Training Business	Overview of the personal training business in the fitness industry. Skills for becoming a successful and effective personal training business owner	Prerequisites: None.	LEC 1.0 1.0 1.0

EXS145	Guidelines for Exercise Testing and Prescription	Follows the current ACSM guidelines for health appraisal, risk assessment, safety of exercise, exercise testing, and exercise prescription	Prerequisites: None.	L+L 3.0 4.5 4.5
EXS146	Sports Nutrition for Fitness Professionals	Advanced principles and applications in sports nutrition for fitness professionals/trainers. Topics include nutrient needs, effectiveness and usage of ergogenic aids, sports nutrition diet, and program development.	Prerequisites: A grade of C or better in FON100 or permission of Instructor.	LEC 0.5 0.5 0.5
EXS150	Introduction to Sports Management	Introduction to the field of sports management, including sports marketing and sales, facility management, event management, professional sports, public relations, intercollegiate and interscholastic athletics.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS175	Ethics in Sports	Sociological and ethical issues of sports management. Focus on the ethical considerations of participating in sports, competition and fair play, gender and sexual equality in sports, and the social ethics of sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS190	Small Group Personal Training in a Studio Setting	Planning and teaching of group exercise and fitness classes in a studio setting. Leadership techniques for effective cueing, appropriate use of music, safety concerns, warm up, cool down and various formats for current popular classes.	Prerequisites: A grade of C or better in EXS125 and EXS130 or accredited national fitness certification or permission of Instructor.	LEC 2.0 2.0 2.0
EXS192	Small Group Personal Training in a Gym	Planning and leading small groups in various formats in a gym or health club setting. Development and implementation of safe and effective use of various types of popular equipment in a small group workout.	Prerequisites: A grade of C or better in EXS125 and EXS130 or accredited national fitness certification or permission of Instructor.	LEC 2.0 2.0 2.0



EXS205	Introduction to Sports Law	Application of legal principles to the sports industry. Focus on tort liability for sport administrators, managers and owners. Examines legal aspects of sports management, including laws and regulations governing player relationships, contracts, employee relations, civil rights, concessions and beverages, safety and concession product liability. Course explores how the law impacts the sports industry, both amateur and professional.	Prerequisites: A grade of C or better in EXS150.	LEC 3.0 3.0 3.0
EXS210	Assessment and Program Design: Muscular Fitness	Principles of muscular fitness training including evaluation of movement patterns, selection and interpretation of assessment techniques and evidence-based program design for healthy and special populations.	Prerequisites: A grade of C or better in EXS125.	L+L 2.0 3.0 3.0
EXS211	Assessment and Program Design: Flexibility and Balance	Principles of flexibility and balance including evaluation of movement patterns, selection and interpretation of assessment techniques and evidence-based program design for healthy and special populations.	Prerequisites: A grade of C or better in EXS125.	L+L 2.0 3.0 3.0
EXS212	Assessment and Program Design: Cardiorespiratory Fitness	Principles of cardiorespiratory fitness training including evaluation of client needs and health, selection and interpretation of safe and effective assessment techniques and evidence-based program design for healthy and special populations.	Prerequisites: A grade of C or better in EXS125.	L+L 2.0 3.0 3.0
EXS213	Assessment and Program Design: Weight Management and Motivation	Principles of weight management including evidence-based program design and interpretation of assessments for various populations as well as explanation of theories of motivation and behavior modification.	Prerequisites: A grade of C or better in EXS125.	L+L 2.0 3.0 3.0

EXS214	Instructional Competency: Flexibility and Mind-Body Exercises	Fundamental methods of instructing and leading fitness activities including flexibility activities. Core competencies identified by professional certification agencies.	A grade of C or better required in all Prerequisites. Prerequisites: RDG100 or RDG100LL or RDG111 or RDG112 or RDG113 or satisfactory score on District reading placement exam and (EXS125 and HES100) or permission of Instructor.	L+L 2.0 3.0 3.0
EXS215	Fitness for Life	Lifetime health and skill-related components of fitness to achieve total wellness. Topics include health and skill-related components of fitness, guidelines for health and fitness assessment, exercise safety and precautions, nutrition, weight control, cardiovascular risk reduction, psychology of fitness and wellness, consumerism, and overall self-management of personal health and lifestyle habits to achieve the highest potential for well-being.	Prerequisites: None.	L+L 3.0 3.0 3.0
EXS216	Instructional Competency: Muscular Strength and Conditioning	Fundamental methods of instructing and leading fitness activities including strength and conditioning activities. Core competencies identified by professional certification agencies.	A grade of C or better required in all Prerequisites. Prerequisites: RDG100 or RDG100LL or RDG111 or RDG112 or RDG113 or satisfactory score on District reading placement exam and MAT120 or satisfactory score on District math placement exam and (EXS125 and HES100) or permission of Instructor.	L+L 2.0 3.0 3.0

EXS218	Instructional Competency: Cardiorespiratory Exercises and Activities	Fundamental methods of instructing and leading fitness activities including cardiorespiratory exercises and activities. Core competencies identified by professional certification agencies.	A grade of C or better required in all Prerequisites. Prerequisites: RDG100 or RDG100LL or RDG111 or RDG112 or RDG113 or satisfactory score on District reading placement exam and MAT120 or satisfactory score on District math placement exam and (EXS125 and HES100) or permission of Instructor.	L+L 2.0 3.0 3.0
EXS220	Personal Trainer Practicum	Integration of knowledge, skills and abilities developed in the prerequisite classes to develop best practices as a fitness professional. Assessment of clients' baseline fitness; development and implementation of a safe and appropriate exercise program. This capstone classroom experience is for students in the personal training certificate program prior to internship.	Prerequisites: A grade of C or better in EXS112, EXS125, EXS130, and FON105.	L+L 3.0 3.0 3.0
EXS230	Introduction to Research Methods in Health and Exercise Science	Introduction to the general nature of research with specific application to accessing, reading, evaluating, and reporting research in health and exercise science. Introduce students to select, data-based literature in order to engender an appreciation for and ability to critically evaluate health/exercise science research.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and MAT082 or permission of Instructor.	LEC 3.0 3.0 3.0
EXS239	Practical Applications of Personal Training Skills and Techniques Internship	Work experience in a fitness or health related facility. Eighty (80) hours of designated work per credit.	Completion of nine (9) credits of EXS courses required for the (AAS in Strength and Personal Training, or CCL in Personal Training Specialist, or CCL in Personal Trainer), current CPR card, and permission of Department or Division.	L+L 3.0 5.4 0.0

EXS239AA	Practical Applications of Personal Training Skills and Techniques Internship	Work experience in a fitness or health related facility. Eighty (80) hours of designated work per credit.	Completion of nine (9) credits of EXS courses required for the (AAS in Strength and Personal Training, or CCL in Personal Training Specialist, or CCL in Personal Trainer), current CPR card, and permission of Department or Division.	L+L 1.0 1.8 0.0
EXS239AB	Practical Applications of Personal Training Skills and Techniques Internship	Work experience in a fitness or health related facility. Eighty (80) hours of designated work per credit.	Completion of nine (9) credits of EXS courses required for the (AAS in Strength and Personal Training, or CCL in Personal Training Specialist, or CCL in Personal Trainer), current CPR card, and permission of Department or Division.	L+L 2.0 3.6 0.0
EXS241	History of Sports in the United States	Traces the development of sports in the United States. Explores the heritage of major sports and reviews significant historical and current issues related to sports in America	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS250	Applied Kinesiology	Anatomical and physiological fundamentals and applications of human movement. Emphasizes the relationship between anatomical structure and function of the musculoskeletal system. Examines neuromuscular aspects of human motion and fundamental stabilization and movement of the extremities and spine. Analyzes kinesiological aspects of functional movement in the human body, and identifies normal and abnormal human movement patterns.	Prerequisites: A grade of C or better in (BIO160 or BIO201) and EXS125 and (EXS130 or EXS212SC).	LEC 4.0 4.0 4.0 LAB 0.0 2.0 2.0

EXS260	Principles of Officiating	Overview of legal rights and responsibilities of the sports official, nutrition and conditioning required of a sports official, psychological aspects of officiation, and effective game and time management techniques. Includes analyzing and maximizing one's own personal officiating style and philosophy	Prerequisites: None.	LEC 2.0 2.0 2.0
EXS262BB	Basketball Officiating	Methods, materials, and techniques of playing and officiating in basketball.	Prerequisites: None.	LEC 2.0 2.0 2.0
EXS262BS	Sports Officiating: Baseball/Softball	Methods, materials and techniques of playing and officiating in baseball, fast-pitch softball, and slow-pitch softball	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS262FB	Sports Officiating: Football/Basketball	Methods, materials and techniques of playing and officiating in flag football, tackle football, and basketball	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS262VB	Volleyball Officiating	Methods, materials, and techniques of playing and officiating in volleyball.	Prerequisites: None.	LEC 2.0 2.0 2.0
EXS263BB	Officiating Basketball	Overview of responsibilities and legal rights of the basketball official, philosophy and psychological aspects of basketball officiating, mechanics and practical situations in basketball officiating, conditioning and nutrition for basketball officials.	Prerequisites: None.	L+L 3.0 4.0 4.0
EXS265	Theory of Coaching	Discusses the impact of sports on the American culture, legal liabilities of coaching, principles of a coaching philosophy, the role of teaching skill, physical conditioning and nutrition in coaching, components of team/group psychology and dynamics, motivation and aggression in sport.	Prerequisites: None. EXS281, suggested but not required.	LEC 3.0 3.0 3.0
EXS265BA	Baseball Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching baseball, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0

EXS265BB	Basketball Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching basketball, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS265FB	Football Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching football, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS265GO	Golf Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching golf, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS265SB	Softball Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching softball, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS265SO	Soccer Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching soccer, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS265TE	Tennis Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching tennis, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS265TF	Track and Field Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching track and field, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS265VB	Volleyball Theory of Coaching	Reviews the principles, philosophy, strategies and theory of coaching volleyball, as a competitive sport.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS270	Sports and Athletics Internship	Work experience in instructor-approved sports, recreation or athletics-related business or program. Practical application of classroom experience in work force.	Prerequisites: Completion of at least nine (9) credits of EXS Exercise Science and/or FON Food and Nutrition and/or SPM Sports Management courses required for related Exercise Science or Sports Management degree and/or certificate program(s) and permission of Instructor or Program Director.	LAB 3 3 0.00

EXS270AA	Sports and Athletics Internship	Work experience in instructor-approved sports, recreation or athletics-related business or program. Practical application of classroom experience in work force.	Prerequisites: Completion of at least nine (9) credits of EXS Exercise Science and/or FON Food and Nutrition and/or SPM Sports Management courses required for related Exercise Science or Sports Management degree and/or certificate program(s) and permission of Instructor or Program Director.	LAB 1 1 0.00
EXS270AB	Sports and Athletics Internship	Work experience in instructor-approved sports, recreation or athletics-related business or program. Practical application of classroom experience in work force.	Prerequisites: Completion of at least nine (9) credits of EXS Exercise Science and/or FON Food and Nutrition and/or SPM Sports Management courses required for related Exercise Science or Sports Management degree and/or certificate program(s) and permission of Instructor or Program Director.	LAB 2 2 0.00
EXS275	Methods of Enhancing Physical Performance	Theoretical and practical applications of performance enhancement methodologies and practices. Basic sport mechanics and exercise physiology. Training clients for speed, power, agility, balance, and endurance activities to enhance athletic performance. Application of training principles to specific sports and design of training programs	Prerequisites: A grade of C or better in EXS125 or EXS130 or permission of Instructor.	LEC 3.0 3.0 3.0
EXS280	Special Topics in Exercise Science	Conceptual and research basis of current topics in exercise science.	Prerequisites: A grade of C or better in EXS101, or EXS112, or EXS125, or permission of Instructor.	LEC 2.0 2.0 2.0
EXS280AA	Special Topics in Exercise Science	Conceptual and research basis of current topics in exercise science.	Prerequisites: A grade of C or better in EXS101, or EXS112, or EXS125, or permission of Instructor.	LEC 0.5 0.5 0.5

EXS280AB	Special Topics in Exercise Science	Conceptual and research basis of current topics in exercise science.	Prerequisites: A grade of C or better in EXS101, or EXS112, or EXS125, or permission of Instructor.	LEC 1.0 1.0 1.0
EXS281	Methods of Coaching	Comprehensive overview of the art and science of coaching, including development of coaching philosophy, techniques of sport pedagogy, practical application of sports skill teaching, sport physiology, nutrition, sport/team management and self management.	Prerequisites: None. PED265 suggested but not required.	LEC 3.0 3.0 3.0
EXS281BA	Baseball Methods of Coaching	Overview of the art and science of coaching baseball including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching baseball.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS281BB	Basketball Methods of Coaching	Overview of the art and science of coaching basketball including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching basketball.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS281FB	Football Methods of Coaching	Overview of the art and science of coaching football including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching football.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS281GO	Golf Methods of Coaching	Overview of the art and science of coaching golf including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching golf.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS281SB	Softball Methods of Coaching	Overview of the art and science of coaching softball, including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching softball.	Prerequisites: None.	LEC 3.0 3.0 3.0



EXS281SO	Soccer Methods of Coaching	Overview of the art and science of coaching soccer including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching soccer.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS281TE	Tennis Methods of Coaching	Overview of the art and science of coaching tennis, including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching tennis.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS281TF	Track and Field Methods of Coaching	Overview of the art and science of coaching track and field, including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching track and field.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS281VB	Volleyball Methods of Coaching	Overview of the art and science of coaching volleyball including: identifying various coaching styles, elements of effective communication, methods and techniques of coaching volleyball.	Prerequisites: None.	LEC 3.0 3.0 3.0
EXS282AA	Service-Learning Experience in Exercise Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
EXS282AB	Service Learning Experience in Exercise Science	Service-learning field experience within private institutions or businesses, governmental agencies, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
EXS282AC	Service-Learning Experience in Exercise Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

EXS285	Exercise Program Design and Instruction	Business aspects of the fitness profession such as program administration, quality assurance, and effective communication skills for the professional personal trainer and/or strength and conditioning coach. Implementation of behavioral strategies, progression of program planning, and development of programs for populations with special physical/medical needs. Designing exercise programs in an internship setting	Prerequisites: A grade of C or better in EXS145 or permission of instructor.	LEC 3.0 3.0 3.0
EXS290	Introduction to Evidence-Based Practice	Introduction to best practices in the acquisition, analysis, synthesis, and potential application of research in the discipline of exercise science. Specific emphasis on the application of research-based evidence for applied problem solving in exercise science.	Prerequisites: A grade of C or better in (RDG100 or RDG100LL or RDG111 or RDG112 or RDG113 or satisfactory score on District reading placement exam) and (MAT090 or MAT091 or MAT092 or satisfactory score on District math placement exam) and (ENG101 or ENG107) or permission of Instructor. EXS101 recommended.	LEC 3.0 3.0 3.0
EXS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

EXS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
EXS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
FAC101	Refrigeration Applications and Components I	Major components of refrigeration systems. Properties of refrigerants and piping practices. Principles of pressure, work, energy, power, matter, internal energy, heat, temperature and the ideal gas processes. Saturated and superheated vapors. Pressure-enthalpy chart and its component parts, vapor compression system, cycle analysis of a single saturated cycle.	Prerequisites: None. Corequisites: FAC/HVA101LL or permission of Instructor.	LEC 3.0 3.0 3.0
FAC101LL	Refrigeration Applications and Components I Lab	Servicing refrigeration units. Includes soldering tubing, installing/removing manifold gauge set, evacuating and charging the system. Emphasis on safety.	Prerequisites: None. Corequisites: FAC101 HVA101 or permission of Instructor.	LAB 1.0 3.0 3.0

FAC105	Electricity for Industry	Electricity related to industrial applications. Operation of and safety protocols for the use of electrical meters. Electrical loads calculations and evaluation of electro-mechanical power sources. Single-phase motors, motor resistance and motor terminals. Function of electro-magnetic solenoids and transformers. National Electric Code.	Prerequisites: None. Corequisites: ELC/FAC/HVA105LL or permission of Instructor.	LEC 3.0 3.0 3.0
FAC105LL	Electricity for Industry Lab	Diagramming and assembling series circuits, parallel circuits and wiring relays, thermostats, switches and lights. Electrical readings on compressors. Emphasis on safety.	Prerequisites: None. Corequisites: ELC/FAC/HVA105 or permission of Instructor.	LAB 1.0 3.0 3.0
FAC115	Motors, Controls and Wiring Diagrams	Principles of three-phase motors. Wye and Delta wiring. Calculation of motor current draw. Sequence of operation, wiring diagram and electrical components associated with industrial equipment. Procedures for evaluating electrical problems. Safety stressed.	Prerequisites: a grade of C or better in ELC/FAC/HVA105 or permission of department or ELC/FAC/HVA105LL or permission of department. Corequisites: ELC/FAC115LL or permission of Department or Division.	LEC 3.0 3.0 3.0
FAC115LL	Motors, Controls and Wiring Diagrams Lab	Drawing wiring diagrams, wiring systems and checking electrical circuits. Troubleshooting electrical problems of three-phase motors and controls. Safety stressed.	Prerequisites: A grade of C or better in ELC/FAC/HVA105 or permission of department or ELC/FAC/HVA105LL or permission of department. Corequisites: ELC/FAC115 or permission of Department or Division.	LAB 1.0 3.0 3.0

FAC186	Electro-Mechanical Devices	<p>Concepts, principles, maintenance, and troubleshooting of mechanical and electro-mechanical devices. Mechanical alignment of shafts, pillow blocks, gears, and couplers on mechanical equipment. Bearings removal and installation. Installation and troubleshooting of pump seals. Vernier calipers, micrometers, tachometers. Use and operation of air flow hoods for air balancing. Belt drive systems and set up and operation of variable frequency drives. Cooling tower water treatment controls and chemical additives.</p>	<p>Prerequisites: A grade of C or better in (FAC/HVA101, FAC/HVA101LL, FAC/ELC/HVA105 and FAC/ELC/HVA105LL or equivalent) or permission of Instructor.</p>	L+L 3.0 5.0 5.0
FAC210	Facilities Air Conditioning Systems	<p>Fundamental principles of air conditioning including all-air, all-water (hydronic) and air-water combination systems. Overview of the physical principles, including air distribution systems and heating and cooling load calculation. System components and application theory for boilers, chillers, pumps, fans, and cooling towers. Theory and application of central air conditioning systems, air cleaning and humidification devices, pressure boosting, heat storage, expansion and pressurization equipment. Properties of water, pressure distribution in hydronic systems, flow in pipes, pressure drop/head loss, pump applications and pressurization of open and closed hydronic systems. Fundamentals of low and high temperature water systems.</p>	<p>Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210LL or permission of Department or Division.</p>	LEC 3.0 3.0 3.0

FAC210LL	Facilities Air Conditioning Systems Lab	Routine procedures on operational central forced-air conditioning systems and hydronic pumping systems. Components and function of large chillers, cooling towers, hot water boilers, associated piping, pumps and constant volume and variable air volume (VAV) air handlers. Perform pump sizing calculations and measurements. Perform measurements and calculations of pressure and air velocity in ducts. Apply the principles of psychometrics to central air handling systems. Evaluation of the energy balance of components and systems. Personal and equipment safety.	Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210 or permission of Department or Division.	LAB 1.0 3.0 3.0
FAC220	Controls and Instrumentation	Control theory and terminology, pneumatics, electrical, and electronic control devices, flow control devices, elementary and advanced control systems. Electric and electronic control systems, programmable logic controls, and facilities management systems. Process and terms used in instrumentation, methods of heat transfer, calculations for heat temperature, and heat transfer. Measuring and calculating pressure, fluid flow, measuring humidity, control action, and instrumentation symbols.	Prerequisites: A grade of C or better in FAC/HVA210 or permission of Department or Division. Corequisites: FAC220LL or permission of Department or Division.	LEC 3.0 3.0 3.0
FAC220LL	Controls and Instrumentation Lab	Calibrating pneumatic electrical, and electronic control devices. Commissioning and troubleshooting elementary and advanced control systems. Programming and tuning direct digital control (DDC) devices. Installing, testing and calibration control and instrumentation sensors. Developing and testing sequences of operation for control loops. Recording and analyzing data from facility management systems.	Prerequisites: A grade of C or better in FAC/HVA210 or permission of Department. Corequisites: FAC220 or permission of Department or Division.	LAB 1.0 3.0 3.0

FAC231	Codes	Local codes, Federal Housing Administration and Urban Development standards. Acceptable building practices based on the Uniform Building Code, National Electric Code, Uniform Mechanical Code, and the Uniform Plumbing Code. Impact of American with Disabilities Act (ADA) on new and existing facilities	Prerequisites: None.	L+L 3.0 5.0 5.0
FAC235	Commercial Air and Water Test and Balance	Specific types of duct distribution systems, fans, coil types and applications. Characteristics of Heating Ventilation and Air Conditioning (HVAC) piping systems. Specific types of pumps and applications. Air and water flow measuring and control devices. Collection and analysis of data specific to air handling systems. Principles of fluid dynamics, thermal loading factors, system design, and component performance. Test and balance plans for air and water systems.	Prerequisites: A grade of C or better in FAC/HVA210 and FAC/HVA210LL, or permission of Instructor. Corequisites: FAC235LL.	LEC 3.0 3.0 3.0
FAC235LL	Commercial Air and Water Test and Balance Lab	Demonstration of duct traversing and diffuser air flow measurement techniques. Water flow measurement techniques. Analysis of water side performance, hydronic balancing, and circuit setter adjustment. Chiller cooling tower and pump testing procedures. Heating, packaged units, split units, and heat pump testing procedures. Collection and analysis of air and water performance.	Prerequisites: A grade of C or better in FAC/HVA210 and FAC/HVA210LL, or permission of Instructor. Corequisites: FAC235.	LAB 1.0 3.0 3.0

FAC240	Fire Protection Systems	Building occupant safety requirements including industry standards, regulations, building codes, fire codes and life safety codes. Fundamentals of fire protection system operation, inspection and maintenance. Principles of life safety systems including fire door and walls, smoke control systems, and exit components.	Prerequisites: A grade of C or better in OSH106AC.	LEC 3.0 3.0 3.0
FAC245	Low Pressure Steam Boiler	Operational characteristics of a low pressure steam boiler, boiler design and construction, boiler fittings, feedwater, fuel, operations, and operating procedures and safety.	Prerequisites: None. Corequisites: FAC245LL or permission of Instructor.	LEC 3.0 3.0 3.0
FAC245LL	Low Pressure Steam Boiler Laboratory	Operating and performing annual maintenance specified by codes for low pressure boilers. Verification of operations for low pressure boilers and corrections of any malfunctions.	Prerequisites: None. Corequisites: FAC245 or permission of Instructor.	LAB 1.0 3.0 3.0
FAC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



FAC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
FAC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
FCS250	Portfolio Development and Professional Writing	Techniques of portfolio development to document prior learning gained through experience, training, and/or previous education. Includes study of learning styles and levels, analysis of personal and vocational experiences, synthesis of these with competencies for specific courses, and integration of the above with other material to create a portfolio to be introduced for evaluation for credit.	Prerequisites or Corequisites: A grade of "C" or better in twelve (12) credit hours of CFS and/or FCS coursework and permission of Program Coordinator. At least six (6) credits of these courses must be taken in a prior semester.	LEC 3.0 3.0 3.0
FCS260	Family and Consumer Science Internship	Work experience in community-based, family-focused service and/or educational organizations. 80 hours of designated work per credit.	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0

FIN281	Basics of Technical Analysis for Investing	Basic overview of Technical Analysis for use and application in securities investing. Emphasis on price action and charting formations. Consideration of indicators and oscillators. Development of appropriate levels of money management and risk management	Prerequisites: None.	LEC 3.0 3.0 3.0
FIN288	Advanced Options for Investing and Trading	Advanced overview of Securities Options for investing and trading. Review of underlying markets and pricing. Consideration of theories and concepts. Emphasis on use of advanced and complex trading tactics and systems.	Prerequisites: A grade of C or better in FIN285 or permission of Instructor.	LEC 3.0 3.0 3.0
FLA240	Foreign Language Teaching Methods	Introduction to methods and techniques for second-language teaching. Principles and procedures for building language proficiency, including the assessment of practical experience through mini-teaching situations	Prerequisites: None.	LEC 3.0 3.0 3.0
FLA282AA	Service-Learning Experience in Foreign Languages	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
FLA282AB	Service-Learning Experience in Foreign Languages	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
FLA282AC	Service-Learning Experience in Foreign Languages	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

FMO101	Certificate for Apartment Maintenance Technicians (CAMT) Training: Maintenance and Repair	This course gives students the skills they need to repair and apply preventive maintenance in keeping the property in excellent condition in the interior and exterior of the buildings. This course provides the solid foundation in electrical work, heating, ventilation, and air conditioning (HVAC), plumbing, appliance and drywall repair, and maintenance that students must have to be successful on the job.	Prerequisites: None.	80
FMO155	Apartment Maintenance Internship	Practical training and application of apartment maintenance under direct supervision of industry preceptor. The purpose of this internship is to allow the student/intern to prepare for their future by applying what was learned during coursework (theory, skill development, professionalism) to the working world. Interns will be provided extensive hands-on experience in their field of study. The intern will work on important and innovative projects alongside our experienced staff, journeyman and managers. Documentation of daily attendance logs and a satisfactory performance evaluation are required to successfully complete the internship. Students must meet the facilities requirements prior to beginning. Internship hours will vary and students are expected to travel and have reliable transportation.	Prerequisites: A grade of C or better in FMO101 or permission of Instructor.	172

FMP104	Scriptwriting	Overview of the script writing process including developing objectives, writing research agendas, designing content outlines, as well as writing a treatment, training script, marketing script, and dramatic training script. Emphasis on the dramatic motion picture screenplay format, the dramatic curve, believable character creation, and dialogue within the first ten pages of a screenplay.	Prerequisites: None.	LEC 3.0 3.0 3.0
FMP105	Studio Production	Multiple camera studio production for corporate, film, cable, and broadcast applications. Basic single and multi-camera production techniques, talent and camera blocking, set design, scriptwriting; shooting; lighting, audio and video recording; production crew team member experience, pre-production planning and budgeting and decision-making.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
FMP108	Video Production	Focus on video production technology in corporate, cable, and broadcast applications. Emphasis on basic production techniques in scriptwriting, single camera film style shooting, lighting, audio recording, and editing, as well as post-production techniques, production personnel and their roles, budgeting and copyright issues.	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
FMP111	Screenwriting I	Provides an introduction to screenwriting for feature films.	Prerequisites: None.	LEC 3.0 3.0 3.0
FMP111AA	Scripting for the Media	Provides an overview of screenwriting for short documentaries, training films, advertising commercials and infomercials.	Prerequisites: None.	LEC 3.0 3.0 3.0

FMP114	Audio Production	Focus on audio in the production of media projects. Emphasis on location-based, studio and sound room for corporate, cable and broadcast applications. Concepts covered include: microphones and audio recording equipment; audio production techniques using shotgun microphones or lavaliers while in the field; audio recording in the sound room, multi-track recording, and mixdown; audio editing using a non-linear computer program; music libraries; sound effects; and editing in audio post-production.	Prerequisites: A grade of C or better in FMP105 or FMP108.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
FMP115	Introduction to Editing for Media	Introduction to editing for media on a nonlinear editing system.	Prerequisites: None.	L+L 3.0 3.0 3.0
FMP117	Introduction to Cinematography	Introductory workshop focusing on basic film and video camera operation and lighting. Emphasis on the role of the cinematographer, basic camera operation and lens selection, introduction to cinematic storytelling to include interpreting the script, basic lighting techniques, exposure meters, film stocks, and planning for the editing style.	Prerequisites: A grade of C or better in FMP108, or FMT136, or permission of Instructor.	L+L 3.0 5.0 5.0
FMP134	Pre-Production for Film and Media	Introduction to elements of pre-production for film, television, and commercial productions. Focuses on aesthetics, writing, budgeting, and selecting cast and crew. Features pre-production meetings to establish style, location, production design, shot list/storyboard, sound design, and shooting schedule. Pre-production of one narrative or collaborative commercial project required. Working as crew on one class shoot required.	Prerequisites: A grade of C or better in FMT100, or FMP108, or permission of Department or Division.	L+L 3.0 4.0 4.0

FMP151	TV and New Media Production	Introduction to multi-camera television production in studio and on location. Emphasizes teamwork and group production through a variety of program types.	Prerequisites: A grade of C or better in FMP105, or FMT100, or permission of Instructor.	L+L 3.0 4.0 4.0
FMP202	Directing	Techniques for directing and blocking talent. Techniques for working with location and studio crews. Field and studio multi-camera production equipment usage. Advanced single and multi-camera shooting styles for corporate, cable and broadcast productions. Advanced post-production techniques for audio, video special effects for editing. The role of the director/producer in pre-production planning for the shoot. Advanced scriptwriting, script breakdowns, production forms, budgeting, and developing positive client relationships.	Prerequisites: A grade of C or better in FMP105.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
FMP204	Advanced Video Production	Video signal manipulation, time base corrector set-up, waveform monitor and vector scope usage. Proper editing techniques using an A/B Roll linear and Non-Linear editor. Video field recording package set-up and usage, advanced continuity shooting, lighting. Techniques for replacing and sweetening audio on a video production. History, theory and design of a television commercial and marketing tape creation.	Prerequisites: A grade of C or better in FMP108.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
FMP206	Production Design	Intermediate workshop on Film Production Design focusing on areas such as script breakdowns for design elements, theories for symbolic and iconic visual content, color and lighting theory, miniatures and model construction and other aspects of production design.	Prerequisites: A grade of C or better in (FMP108 and [FMP134 or FMT134]), or FMT136, or permission of Instructor.	LEC 3.0 3.0 3.0

FMP208	Production Company Management	The coordination and supervision of the personnel involved in the production team; preparation of charge-back system; facility budgets in equipment, personnel, and operation; interaction with senior management.	Prerequisites: None.	LEC 3.0 3.0 3.0
FMP211	Screenwriting II	Workshop in screenwriting for feature films and television.	Prerequisites: A grade of C or better in FMP111 or permission of Instructor.	LEC 3.0 3.0 3.0
FMP213AA	Motion Picture Workshop: On-Location Shooting	Practical work and classes in film production. Features on location shooting.	Prerequisites: A grade of C or better in FMT136 or permission of Instructor.	L+L 4.0 4.0 4.0
FMP214AA	Video Production Internship	Video production work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Instructor.	L+L 1.0 1.0 1.0
FMP214AB	Video Production Internship	Video production work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Instructor.	L+L 2.0 2.0 2.0
FMP214AC	Video Production Internship	Video production work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Instructor.	L+L 3.0 3.0 3.0
FMP215	Digital Video Effects	Basics of video-production including the use of colors, textures, and shapes in the preparation of graphics for video production. Graphics design using the rules of good design and techniques for interaction with Producer/Directors. Story boarding and animation techniques, character generation. Video special effects creation and design, logo and photo import into video productions.	Prerequisites: A grade of C or better in FMP108, or FMP115, or permission of Instructor. FMP115 strongly recommended for students in Film and Media Production (3570). ADA/ART/MMT184 strongly recommended.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
FMP216	Screenwriting III	Advanced workshop in narrative screenwriting for film and television.	Prerequisites: A grade of C or better in FMP211.	L+L 3.0 7.0 7.0

FMP260	Film and Media Producing and Financing	Guides the independent film/video producer through basic business aspects of production. Examines methods of setting up a production company, strategies for financing and distribution, and approaches to packaging a film/video project. Includes development of a prospectus on a specific film/video project.	Prerequisites: None.	L+L 3.0 4.0 4.0
FMP270	Documentaries for Social Change	Study of and practical application in social documentary film production. Focuses on diverse voices and styles of social documentaries, philosophical issues faced by the filmmaker, technical considerations, and business elements required for financial and commercial success of the social documentary.	Prerequisites: A grade of C or better in (FMP108 and FMP115), or FMT136, or permission of Instructor.	L+L 4.0 6.0 6.0
FMP275	Advanced Portfolio Production	Advanced workshop in portfolio development for Producers, Directors, Cinematographers, Production Designers, Editors, and Screenwriters.	Prerequisites: Permission of Instructor.	L+L 4.0 7.0 7.0 0 0
FMP294AA	Special Topics in Motion Picture, Television, Documentary, and New Media Production	Exploration of current topics, issues and aspects of motion picture, television, documentary, and new media production.	Prerequisites: A grade of C or better in (FMP108 and FMP115) or FMT136, or permission of Instructor.	LEC 1.0 1.0 1.0
FMP294AB	Special Topics in Motion Picture, Television, Documentary, and New Media Production	Exploration of current topics, issues and aspects of motion picture, television, documentary, and new media production.	Prerequisites: A grade of C or better in (FMP108 and FMP115) or FMT136, or permission of Instructor.	LEC 2.0 2.0 2.0
FMP294AC	Special Topics in Motion Picture, Television, Documentary, and New Media Production	Exploration of current topics, issues and aspects of motion picture, television, documentary, and new media production.	Prerequisites: A grade of C or better in (FMP108 and FMP115) or FMT136, or permission of Instructor.	LEC 3.0 3.0 3.0



FMP298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
FMP298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
FMP298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
FMT100	Introduction to Production	Introduction to the major production components of a multimedia project.	Prerequisites: None.	L+L 3.0 3.0 3.0

FMT107	Career Pathways in the Media	Emphasis on theories of broadcasting, how the media functions in our society, the business structure of the U.S. media environment, the cultural import and potential impact of the programming and films, and the growth of new communications technologies.	Prerequisites: None.	LEC 3.0 3.0 3.0
FMT117	Introduction to Cinematography	Introductory workshop focusing on basic film and video camera operation and lighting. Emphasis on the role of the cinematographer, basic camera operation and lens selection, introduction to cinematic storytelling to include interpreting the script, basic lighting techniques, exposure meters, film stocks, and planning for the editing style.	Prerequisites: A grade of C or better in FMP108, or FMT136, or permission of Instructor.	L+L 3.0 5.0 5.0
FMT118	Lighting for Film, TV, and Media	Introductory workshop focusing on lighting for video and film productions. Emphasis on the role of the cinematographer in developing a look and mood for a production and to tell a story through the use of light and color.	Prerequisites: None.	L+L 3.0 5.0 5.0
FMT120	Introduction to Sound Design for Film and Video	Basic principles of recording and mixing sound for film and video. Includes voice-over, automatic dialog replacement (ADR), foley, ambience, special effects and music. Emphasis on analog and digital recording techniques in the field as well as in a controlled environment.	Prerequisites: A grade of C or better in (FMT100 and FMT136) or permission of Instructor.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 1.0
FMT121	Story Theory for Film, Television and Media	Introduction to story theory and structure as it applies to screenwriting for feature films, television programs (one-hour dramas and sitcoms) and related media.	Prerequisites: None.	LEC 3.0 3.0 3.0
FMT123	Feature Screenwriting: First Draft	Intermediate workshop focused in writing initial draft of a narrative feature film screenplay.	Prerequisites: A grade of C or better in FMT121.	L+L 3.0 6.0 6.0

FMT124	Television Screenwriting: Writers Room	Intermediate workshop focused on understanding the collaborative nature of series/television (TV) story development (i.e., writers room) and writing initial draft of a spec script for an existing TV one-hour drama or half-hour sitcom.	Prerequisites: A grade of C or better in FMT121.	L+L 3.0 6.0 6.0
FMT134	16mm Film Workshop: Pre-Production	Introduction to elements of pre-production for motion picture and television. Focuses on aesthetics, scriptwriting, budgeting, and selecting cast and crew. Features pre-production meetings to establish style, location, art design, shot sheet/storyboard, sound design, shooting schedule and film stock/video tapes. Pre-production of one film project and one video project required. Working as crew on one class shoot required.	Prerequisites: A grade of C or better in FMP105, or FMT100, or permission of Department or Division.	L+L 3.0 4.0 4.0
FMT135	16mm Film Workshop: Production	Introduction to elements of production for motion picture and television. Focuses on directing, crew responsibilities, camera operation, lenses, lighting and sound recording. Production of one film shoot and one video shoot required.	Prerequisites: A grade of C or better in FMT134, or permission of Department or Division.	L+L 3.0 3.0 3.0
FMT136	16mm Film Workshop: Post-Production	Introduction to elements of post-production for motion picture and television. Focuses on editing, titles, sound design and marketing strategies. Post-production and marketing of one film and one video required.	Prerequisites: A grade of C or better in FMT135 or permission of Department or Division.	L+L 3.0 3.0 3.0
FMT151	TV and New Media Production	Introduction to multi-camera television production in studio and on location. Emphasizes teamwork and group production through a variety of program types.	Prerequisites: A grade of C or better in FMP105, or FMT100, or permission of Instructor.	L+L 3.0 4.0 4.0

FMT206	Production Design	Intermediate workshop on Film Production Design focusing on areas such as script breakdowns for design elements, theories for symbolic and iconic visual content, color and lighting theory, miniatures and model construction and other aspects of production design.	Prerequisites: A grade of C or better in (FMP108 and [FMP134 or FMT134]), or FMT136, or permission of Instructor.	LEC 3.0 3.0 3.0
FMT217	Advanced Cinematography	Advanced workshop focusing on film and video camera operation and lighting. Emphasis on the role of the cinematographer and camera department, in-depth camera operation and lens selection, advanced cinematic storytelling to include interpreting the script, advanced lighting techniques, exposure meters, film stocks, and planning for the editing style. In-depth analysis of on-set communication and collaboration between the Cinematographer and other key crew members.	Prerequisites: A grade of C or better in FMP/FMT117 and (FMP204 or FMT241), or permission of Instructor.	L+L 3.0 5.0 5.0
FMT220	Advanced Sound Design for Film and Video	Explores techniques and advanced applications used in designing sound using original student footage on a non-linear editing system.	Prerequisites: A grade of C or better in FMT/MTC120 or permission of Instructor.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 2.0
FMT223	Feature Screenwriting: The Rewrite	Advanced workshop focused in rewriting narrative feature film screenplay, developing an individual writing voice and understanding the professional feature writing landscape.	Prerequisites: A grade of C or better in FMT123.	L+L 3.0 6.0 6.0
FMT224	Television Screenwriting: Original TV Pilot	Advanced workshop focused on creating an original television series concept, writing an original pilot script for the series, developing an individual writing voice and understanding the professional television writing landscape.	Prerequisites: A grade of C or better in FMT121.	L+L 3.0 6.0 6.0

FMT230	Motion Picture Directing	Theory and practice in directing the motion picture. Includes overview of the roles and responsibilities of the film director, examples of film directing, and practice sessions in analyzing a script, creating a scene, working with actors, conducting rehearsals, planning the camera movements and overseeing elements of a production.	Prerequisites: A grade of C or better in (FMT117, FMT/MTC120, FMT121, and FMT241) or permission of Instructor.	L+L 4.0 4.0 4.0
FMT241	AVID Media Composer Editing	Editing on a Media Composer non-linear editing system, including timeline editing, trimming, dialog and action editing, refining audio, basic multi-layer motion, and 3D effects; also covers basic and intermediate color correction, intermediate and three-dimension titling, working with tape and file based media, and media management.	Prerequisites: A grade of C or better in FMT136 or permission of Instructor.	L+L 4.0 6.0 6.0
FMT242	Professional Portfolio for Film, TV, and Media	Explores techniques and applications used in editing an individual project on an editing system.	Prerequisites: A grade of C or better in FMT241 or permission of Instructor.	L+L 2.0 4.0 4.0
FMT242AA	Professional Portfolio in Screenwriting	Explores techniques and applications used in screenwriting for an individual project.	Prerequisites: A grade of C or better in FMT223 or FMT224.	L+L 2.0 4.0 4.0
FMT243	Introduction to Video Compositing and Title Animation	Introduction to computer-based video compositing and title animation.	Prerequisites: A grade of C or better in FMT241 or permission of Instructor.	L+L 4.0 6.0 6.0
FMT244	Film Finishing	Introduction to editing system and applications.	Prerequisites: A grade of C or better in FMT241 or permission of Instructor.	L+L 4.0 6.0 6.0
FMT248	Advanced Film Production Techniques	Advanced workshop in the techniques of film production. Emphasizes real world simulation of production departments.	Prerequisites: A grade of C or better in (FMP/FMT117 and FMT/MTC120) or permission of Instructor.	L+L 4.0 6.0 6.0 0 0
FMT251	Advanced Studio Production	Advanced video production within a studio environment.	Prerequisites: A grade of C or better in (FMP/FMT117, FMT121, FMT151, and FMT241) or permission of Instructor.	L+L 3.0 5.0 5.0

FMT260	Motion Picture Producing and Production Management	Introduction to functions specific to producing, production management, and business affairs for film, television, and new media productions.	Prerequisites: A grade of C or better in FMT136.	L+L 3.0 3.0 3.0
FMT263	Film Style, Theory and Analysis	Survey of the development of the art and theory of motion pictures, including study and criticism of stylistic elements. Tailored toward teaching different approaches and techniques of filmmaking as demonstrated in a variety of historic film movements. Designed for students focusing on filmmaking.	Prerequisites: A grade of C or better in FMT136 or permission of Instructor.	LEC 4.0 4.0 4.0
FMT270	Documentaries for Social Change	Study of and practical application in social documentary film production. Focuses on diverse voices and styles of social documentaries, philosophical issues faced by the filmmaker, technical considerations, and business elements required for financial and commercial success of the social documentary.	Prerequisites: A grade of C or better in (FMP108 and FMP115), or FMT136, or permission of Instructor.	L+L 4.0 6.0 6.0
FMT280	The Art of Editing	A lab intensive post-production course. Emphasizes the art of editing movie and television media and the development of editing skills. Editing products, including demo reels, from instructor provided or student provided quality raw footage.	Prerequisites: A grade of C or better in FMT241 or permission of Instructor.	L+L 3.0 5.0 5.0
FMT283	Advanced Non-Linear Editing Techniques	Explores techniques and advanced applications used in creating and editing an advanced project on a non-linear editing system.	Prerequisites: A grade of C or better in FMT241 or permission of Instructor.	L+L 4.0 6.0 6.0
FMT283AA	Advanced Non-Linear Editing Techniques: AVID	Explores techniques and advanced applications used in creating and editing an advanced project on a non-linear editing system.	Prerequisites: A grade of C or better in FMT241 or permission of Instructor.	L+L 4.0 6.0 6.0
FMT294AA	Special Topics in Motion Picture, Television, Documentary, and New Media Production	Exploration of current topics, issues and aspects of motion picture, television, documentary, and new media production.	Prerequisites: A grade of C or better in (FMP108 and FMP115) or FMT136, or permission of Instructor.	LEC 1.0 1.0 1.0

FMT294AB	Special Topics in Motion Picture, Television, Documentary, and New Media Production	Exploration of current topics, issues and aspects of motion picture, television, documentary, and new media production.	Prerequisites: A grade of C or better in (FMP108 and FMP115) or FMT136, or permission of Instructor.	LEC 2.0 2.0 2.0
FMT294AC	Special Topics in Motion Picture, Television, Documentary, and New Media Production	Exploration of current topics, issues and aspects of motion picture, television, documentary, and new media production.	Prerequisites: A grade of C or better in (FMP108 and FMP115) or FMT136, or permission of Instructor.	LEC 3.0 3.0 3.0
FMT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 1.0 5.0 0.0
FMT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 2.0 10.0 0.0

FMT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 3.0 15.0 0.0
FMT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to student's academic or career goals (student's present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 4.0 20.0 0.0
FMT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



FMT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
FMT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
FON100	Introductory Nutrition	Introduction to the science of food and human nutrition. Current sustainable dietary recommendations and applications for maximizing well-being and minimizing risk of chronic disease throughout the life cycle. An overview of the nutrients, emphasizing the importance of energy and fluid balance, and optimal functioning of the digestive system. Understanding factors that influence food intake in different cultures. Methods for evaluating credibility of nutrition claims, a focus on modern food safety and technology practices, and a worldview of nutrition are included. Emphasis is on personal dietary behavior change for a holistic life of wellness.	Prerequisites: None.	LEC 3.0 3.0 3.0

FON100LL	Introductory Nutrition Laboratory	Introduction to nutrition using anthropometric, biochemical, clinical, and dietary analysis. Includes the use of qualitative and quantitative methodology to determine nutritional status and evaluate methodological applications. Emphasis on relationship between energy balance and weight regulation and health.	Prerequisites: None.	LAB 1.0 3.0 3.0
FON101	Critical Food Studies	Introduction to foundational methodologies and concepts central to the interdisciplinary field of critical food studies. Basic concepts related to food governance, food security, food and social justice, and sustainability. Exploration of questions related to the food system including food production and distribution, access to food, and ecological consequences of agricultural practices. Issues of sustainability and equity are evaluated throughout the agri-food system from farm to fork.	Prerequisites: None.	LEC 3.0 3.0 3.0
FON104	Certification in Food Service Safety and Sanitation	Preparation for and certification in a national food sanitation and safety program. Emphasis on food from purchasing, receiving, and storing to preparation, holding, and serving. Focuses on safe and sanitary food service facilities and equipment, employee habits and personal hygiene, and role of management in safety and sanitation. Includes time-temperature principles, foodborne illnesses, pest control, accident prevention, standards for cleaning and sanitizing, and regional regulations and standards.	Prerequisites: None.	LEC 1.0 1.0 1.0

FON105	Nutrition Principles for Fitness Professionals	Basic principles of nutrition for the prospective fitness professional. Overview of health and wellness and its relationship to personal trainers. Emphasis on general principles of nutrition for health and fitness. Topics include: basic nutrition principles using the current food plans and dietary guidelines, label reading, estimating calorie and nutrient needs for health, fitness, sport, and weight management	Prerequisites: None.	LEC 3.0 3.0 3.0
FON125	Introduction to Professions in Food, Nutrition, and Dietetics	Overview and discussion of career opportunities in the fields of food, nutrition, and dietetics. Includes information about history, ethics, standards of practice, communication and counseling skills. Emphasis on how to become a Registered Dietitian Nutritionist or a Dietetic Technician Registered.	Prerequisites: None.	LEC 1 1 1
FON135	Sustainable Cooking	Basic cooking techniques for healthful and enjoyable eating. Emphasis on strategies for maximizing the use of whole, local, and nutrient-dense food while focusing on applying the dietary recommendations for optimal health to food choices. Opportunities to learn about sustainable food living and identifying resources that enable people to be more in control of their food supply.	Prerequisites: None.	L+L 3.0 4.0 4.0
FON142AB	Science of Food	Exploration and Application of Scientific Principles of Food; experiences with ingredient functionality and application in cooking techniques.	Prerequisites: None.	L+L 3.0 5.0 5.0

FON143	Food and Culture	Understanding diet in the context of culture. Historical, religious, and sociocultural influences on the development of cuisine, meal patterns, eating customs, cooking methods, and nutritional status of various ethnic groups. Traditional and contemporary food habits. Health and social impact of changes in diet. Preparation and serving of foods from many cultures.	Prerequisites: None.	L+L 3.0 3.0 3.0
FON161	Sustainable Food Production Systems	Overview of the global food system. Covers historical events impacting current food production model and the effects food systems have on the environment, health, and communities. Also covers conventional agriculture and food safety concerns. Emphasis on the movement towards sustainable food systems.	Prerequisites: None.	LEC 3.0 3.0 3.0
FON162	Organic Foods Production	Overview of alternative farming systems. Covers organic and alternatively grown foods production as well as the Organic Foods Production Act. Includes principles of sustainable agriculture and Fair Trade. National Organic Program also covered.	Prerequisites: None.	LEC 3.0 3.0 3.0
FON163	Sustainable Kitchen Practices	Overview of sustainable kitchen practices. Covers energy efficient appliances and equipment, as well as electricity and water conservation practices. Includes environmentally friendly kitchen products and methods for disposal of waste. Researching food sources, purchasing locally, and building relationships are also covered. Emphasis in preparing organic, seasonal and local foods, and developing sustainable menus. Challenges for a sustainable future discussed.	Prerequisites: None.	L+L 3.0 5.0 5.0

FON165	Food Entrepreneurship	Overview of the process for starting a small food business. Covers stages for introducing a variety of food products into the market, food safety, and sanitation requirements. Includes business and marketing strategies, processing, labeling, and distribution requirements for different food product types such as dairy, meat, poultry, and fish. Also covers available resources for small food business support.	Prerequisites: None.	LEC 3.0 3.0 3.0
FON207	Introduction to Nutrition Services Management	Principles, knowledge, and techniques required for effective nutrition services management. Includes nutrition service issues in relation to health care trends, leadership skills, management theories and styles, food service manager responsibilities, and laws which pertain to nutrition service operations.	Prerequisites: A grade of C or better in [(MAT055 and MAT056 and MAT057) or MAT090 or MAT091 or MAT092] or satisfactory score on mathematics placement exam.	LEC 3.0 3.0 3.0
FON210	Sports Nutrition and Supplements for Physical Activity	Principles of nutrition applied to fitness, exercise, and sports. Dietary fundamentals as applied to body fuels, hydration, and other unique needs for exercise and sports. Includes dietary guidelines for weight or endurance training, glycogen loading, the pre-game meal, and glycogen recovery. Emphasis on maximizing fitness, performance, and safety. Discussion of supplements and their effects on metabolic enhancement. Discussion of anabolic, catabolic, and energy-producing agents. Addresses current supplements on the market.	Prerequisites: A grade of C or better in FON100 or FON241.	LEC 3.0 3.0 3.0
FON225	Research in Complementary and Alternative Nutrition Therapies	Introduction to basic research methods and statistics as applied to complementary and alternative nutrition therapies. Emphasis on the analysis and interpretation of health-related research.	Prerequisites: A grade of C or better in MAT092 or equivalent or satisfactory score on district placement exam.	LEC 3.0 3.0 3.0

FON230	Nutrition for Special Populations	Nutritional changes and appropriate management across the lifespan to maximize health and longevity. Addresses needs of those individuals with particular dietary restrictions, requirements or deficiencies. Includes special dietary needs of those diagnosed with common pathologies such as heart disease, diabetes.	Prerequisites: A grade of C or better in FON100, or FON241, or permission of Instructor.	LEC 3.0 3.0 3.0
FON241	Principles of Human Nutrition	Scientific principles of human nutrition. Emphasis on scientific literacy and the study of nutrients for disease prevention. Includes micro and macro nutrients, human nutrient metabolism and nutrition's role in the health of the human body throughout the life cycle. Addresses nutrition principles for prevention of nutrition-related health conditions.	Prerequisites: None.	LEC 3.0 3.0 3.0
FON241LL	Principles of Human Nutrition Laboratory	Self-evaluative laboratory experience to complement FON241, Principles of Human Nutrition using anthropometric, biochemical, clinical, dietary analysis, and ecological/economical assessments. Includes the use of qualitative and quantitative methodology to determine nutritional status and evaluate methodological applications.	Prerequisites: A grade of C or better in FON241 or Corequisites: FON241.	LAB 1.0 3.0 3.0

FON242	Introduction to Medical Nutrition Therapy	Introduction to fundamental principles of medical nutrition therapy. Introduces the study of nutritional therapy of disease and evidence-based practice in prevention and nutritional management of diseases. Nutrition care planning for chronic diseases is taught via a variety of methods including case studies. This course applies foundational skills in the application of the Nutrition Care Process (NCP) for diet therapy implementation and documentation. Includes strategies to promote dietary adherence and the development of educational programs for a diverse adult population.	Prerequisites: A grade of C or better in BIO160 and FON241.	LEC 3.0 3.0 3.0
FON244AA	Food Service Management Practicum	Classroom preparation and training, under the instruction and supervision of a registered dietitian. Application of principles, knowledge, and skills required in the delivery of nutrition services for food service management including food service operations, quantity food production, procurement, organizing and management principles, facility design and equipment, financial management, food safety and sanitation, menu planning, and marketing.	Prerequisites: A grade of C or better in (FON104, FON125, FON142AB, FON207, and FON242) and permission of Program Director. Corequisites: FON244AB.	LEC 2.0 2.0 2.0
FON244AB	Food Service Management Practicum Laboratory	Practicum experience under the supervision of a registered dietitian. Application of principles, knowledge, and skills required in the delivery of nutrition services for food service management including food service operations, quantity food production, procurement, organizing and management principles, facility design and equipment, financial management, food safety and sanitation, menu planning, and marketing.	Prerequisites: A grade of C or better in (FON104, FON125, FON142AB, FON207, and FON242) and permission of Program Director. Corequisites: FON244AA.	LAB 2.5 10.0 0.0

FON245AA	Medical Nutrition Therapy Practicum	Classroom preparation and training, under the instruction and supervision of a registered dietitian. Understanding of principles, knowledge, and skills required for the delivery of medical nutrition therapy. Comprehension of nutritional screening, assessment, monitoring, and evaluation for common and complex medical conditions, medical documentation, patient interviewing and counseling, and education in health promotion and disease prevention.	Prerequisites: A grade of C or better in (FON125, FON242, and HCC145AA) and (MAT092, or equivalent, or satisfactory score on district placement exam) and permission of Program Director. Corequisites: FON245AB.	LEC 2.0 2.0 2.0
FON245AB	Medical Nutrition Therapy Practicum Laboratory	Practicum experience under the supervision of a registered dietitian. Application of principles, knowledge, and skills required for the delivery of medical nutrition therapy. Perform nutritional screening, assessment, monitoring, and evaluation for common and complex medical conditions, medical documentation, patient interviewing and counseling, and education in health promotion and disease prevention.	Prerequisites: A grade of C or better in (FON125, FON242, and HCC145AA) and (MAT092, or equivalent, or satisfactory score on district placement exam) and permission of Program Director. Corequisites: FON245AA.	LAB 2.5 10.0 0.0
FON246AA	Community Nutrition Practicum	Classroom preparation and training, under the instruction of a registered dietitian. Understanding of principles, knowledge and skills required in the delivery of nutrition services in community-based agencies, outpatient health care settings, and social service agencies. Includes knowledge and understanding of nutrition intervention and wellness promotion for individuals and groups across the lifespan, i.e. infants through geriatrics with a diversity of cultural, religious and social backgrounds.	Prerequisites: A grade of C or better in (FON125 and FON242) and permission of Program Director. Corequisites: FON246AB.	LEC 2.0 2.0 2.0



FON246AB	Community Nutrition Practicum Laboratory	Practicum experience under the supervision of a registered dietitian. Application of principles, knowledge and skills required in the delivery of nutrition services in community-based agencies, outpatient health care settings, and social service agencies. Includes nutrition intervention and wellness promotion for individuals and groups across the lifespan, i.e. infants through geriatrics with a diversity of cultural, religious and social backgrounds.	Prerequisites: A grade of C or better in (FON125 and FON242) and permission of Program Director. Corequisites: FON246AA.	LAB 2.0 10.0 0.0
FON247	Weight Management Science	The comprehensive study of obesity as a disease of modern society due to multiple determinants. Use of evidence-based data and methods to assess and manage weight in various settings. Use of client-centered counseling strategies, including behavior change theories. Focus on discovering successful healthful long-term weight management strategies.	Prerequisites: A grade of C or better in FON100 or FON241 or permission of Instructor.	LEC 3.0 3.0 3.0
FON285	Food and Nutrition Studies Internship	Work experience in an area directly related to sustainable food systems. Application of sustainable food system principles and practices from seed to support to service, including gardening and farming, managing food waste, advocacy, preparing and preserving food, and working with chefs and small farmers who are committed to supporting and providing local and regional sustainable food. Supervision and evaluation by an internship coordinator.	Prerequisites: A grade of C or better in FON161 or permission of Department Chairperson or Program Director.	LAB 3.0 15.0 0.0

FON298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
FON298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
FON298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

FOR105	Forensic Science: Physical Evidence	Scientific analysis and examination of physical evidence for forensic purposes. Covers fingerprints, shoe prints, tool marks, glass, soil and mineral evidence, firearms identification, paint chips, and arson and explosive evidence. Includes the history of forensic science, functions of the crime lab and criminalist career specialties	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
FOR106	Forensic Science: Biological Evidence	Scientific analysis and examination of biological evidence for forensic purposes. Covers blood, bloodstains, other biological fluids and stains, hair, DNA, toxicological evidence, controlled substances and alcohol. Includes the history of forensic science, functions of the crime lab, and criminalist career specialties	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
FOR275	Forensic Anthropology	Survey of the role of forensic anthropologists, from the crime scene to the courtroom. Course focuses on how skeletal analysis can aid in medicolegal investigations, especially by identifying aspects of the life history of unknown individuals and by reconstructing events that took place at crime scenes. Covers both the legal aspects of forensic practice and the underlying biological basis for evidence obtained from skeletal remains. Examines applications of forensic anthropology in mass disasters, human rights investigations, and the deciphering of historic cases. Lab activities designed to illustrate techniques and principles central to the discipline.	Prerequisites: None.	L+L 4.0 5.0 5.0

FPA101	Principles of Fiduciary Practice	Examines the foundations and requirements for fiduciary practice in Arizona including certification. Introduction to office practices, probate, care management, accounting, and decision making. Emphasis on ethical and professional practices	Prerequisites: None.	LEC 1.0 1.0 1.0
FPA275AA	Practicum in Fiduciary Practice	Field experience in fiduciary practice. Entails working under the supervision of an Arizona certified fiduciary or other professional in accordance with Arizona certification requirements (Arizona Code of Judicial Administration). Experience in guardianship, conservatorship, and/or personal representative duties. Details of specific assignment determined by student in consultation with instructor.	Prerequisites: A grade of C or better in FPA101 and permission of program director.	LAB 1.0 5.0 0.0
FPA275AB	Practicum in Fiduciary Practice	Field experience in fiduciary practice. Entails working under the supervision of an Arizona certified fiduciary or other professional in accordance with Arizona certification requirements (Arizona Code of Judicial Administration). Experience in guardianship, conservatorship, and/or personal representative duties. Details of specific assignment determined by student in consultation with instructor.	Prerequisites: A grade of C or better in FPA101 and permission of program director.	LAB 2.0 10.0 0.0
FPA275AC	Practicum in Fiduciary Practice	Field experience in fiduciary practice. Entails working under the supervision of an Arizona certified fiduciary or other professional in accordance with Arizona certification requirements (Arizona Code of Judicial Administration). Experience in guardianship, conservatorship, and/or personal representative duties. Details of specific assignment determined by student in consultation with instructor.	Prerequisites: A grade of C or better in FPA101 and permission of program director.	LAB 3.0 15.0 0.0
FRE085AA	Speedy French I	Basic vocabulary and grammar to develop conversational skills in French	Prerequisites: None.	LEC 1.0 1.0 1.0

FRE085AB	Speedy French II	Intermediate vocabulary and grammar to develop conversational skills in French	Prerequisites: A grade of C or better in FRE085AA. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
FRE085AC	Speedy French III	Advanced vocabulary and grammar to develop conversational skills in French.	Prerequisites: A grade of C or better in FRE085AB. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
FRE101	Elementary French I	Basic grammar, pronunciation and vocabulary of the French language. Includes the study of French culture, practice of listening, speaking, reading and writing skills.	Prerequisites: None.	LEC 4.0 4.0 4.0
FRE101AA	Elementary French I	Basic grammar, pronunciation and vocabulary of the French language. Includes the study of French culture, practice of listening, speaking, reading and writing skills.	Prerequisites: None.	L+L 4.0 5.0 5.0
FRE102	Elementary French II	Continued study of grammar and vocabulary of the French language along with the study of French culture. Emphasis on speaking, listening, reading and writing skills.	Prerequisites: A grade of C or better in FRE101 or FRE101AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
FRE102AA	Elementary French II	Continued study of grammar and vocabulary of the French language along with the study of French culture. Emphasis on speaking, listening, reading and writing skills.	Prerequisites: A grade of C or better in FRE101 or FRE101AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 4.0 5.0 5.0
FRE115	Beginning French Conversation I	Conversational French. Basic sentence structure, pronunciation and vocabulary necessary to develop speaking ability in French. Designed for students seeking speaking and listening abilities with little emphasis on grammar	Prerequisites: None.	LEC 3.0 3.0 3.0

FRE116	Beginning French Conversation II	Continued development of speaking and listening skills for effective communication in French.	Prerequisites: A grade of C or better in FRE115 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
FRE201	Intermediate French I	Review of essential grammar of the French language and study of French culture. Continued practice and development of reading, writing, and speaking skills.	(FRE102 or FRE102AA with a grade of "C" or better), or two years of high school French with an average of "C" or better, or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
FRE202	Intermediate French II	Review of grammar, continued development of French language skills, and continued study of the French culture.	Prerequisites: A grade of C or better in FRE201 or three years of high school French with an average of C or better. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
FRE225	Intermediate French Conversation I	Continued development of skills in conversational French for business or travel.	Prerequisites: A grade of C or better in FRE116 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
FRE226	Intermediate French Conversation II	Development of intermediate level skills in conversational French for business and travel.	Prerequisites: A grade of C or better in FRE225 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
FRE265	Advanced French I	In-depth exploration of a selected theme related to French culture. Involves reading selections from French literature, writing reports, and discussions in French. Emphasis on enhancing reading, writing and speaking skills.	Prerequisites: A grade of C or better in FRE202 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0

FRE266	Advanced French II	Continuation of FRE265, Reading selections from French literature, written reports, and discussions in French designed to further develop reading, writing and speaking skills.	Prerequisites: A grade of C or better in FRE265 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
FRE296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
FRE296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

FRE296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
FRE296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
FRE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



FRE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
FRE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

FSC101	Introduction to Fire Service Selection and Entry	Overview of the application and selection processes used by various fire departments and fire service organizations. Focus on the skills and abilities required for entry-level positions in the fire department, including oral and written communication skills, mathematical and mechanical skills, problem-solving skills, and physical agility and stamina. Elements of fire service culture and their effects on personal growth and interpersonal relationships. Major components of written application processes, requirements, preparation of resumes and their effect on employment prospects. Preparation for the interview to include communications skills, mental preparation techniques, behaviors, and the importance of the interview in the pre-employment process.	Prerequisites: None.	L+L 4.0 5.0 5.0
FSC102	Fire Department Operations	Introductory fire science course primarily designed for the fire department recruit. Includes firefighting skills, equipment, and administrative policies, fire department operations, personnel policies, and International Fire Service Accreditation Congress Practical Skills Testing. Satisfies minimum standards for certification testing set forth by the current Arizona State Training and Certifying Authority.	Prerequisites: A grade of C or better in FSC105, FSC130, and permission of Instructor. Corequisites: (FSC134 or FSC234) and FSC174.	L+L 11.0 19.6 19.6
FSC103	Advanced Firefighter	Comprehensive review of Fire Department Standard Operating Procedures, Evaluation of Fitness and Conditioning as they relate to fire ground skills. Emphasis on physical development and hands on activities providing participants with skills necessary to safely operate on the fire ground and at emergency scenes	Successful completion of the Fire Operations Academy Certified Firefighter I and II through Arizona Fire Marshal and current PASS on Candidate Physical Ability Test (CPAT).	L+L 7.0 11.0 11.0

FSC105	Hazardous Materials Awareness and Operations	Basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials; basic safety procedures when utilizing specific types of protective clothing and equipment; basic tactical information relating to scene management. Satisfies minimum standards for certification testing set forth by the current ProBoard and/or Arizona State Training and Certifying Authority.	Prerequisites: None.	L+L 3.0 3.0 3.0
FSC106	Introduction to Fire Protection	History and evaluation of fire department organization. Role of the fire service in the community. Responsibilities of the fire administrator including organization, departmental functions, interdepartmental relationships, management of buildings and equipment; techniques of fire-fighting. Also includes emergency medical services and fire prevention	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC108	Fundamentals of Fire Prevention	Fundamentals of fire prevention. Includes techniques, procedures, regulations, and enforcement. Also includes discussion of hazards in ordinary and special occupancies. Field trips and lectures from industry also included	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC109	Emergency Response Team for Industry	Common industrial hazards related to chemicals, gases, fire, energy sources, and spills. Emergency response procedures to control and conclude hazardous incidents	Prerequisites: None.	LEC 3.0 3.0 3.0 LAB 0.0 2.6 2.6

FSC110	Wildland Firefighter	Basic-level course for individuals with little or no experience in the wildland environment. Preparation for performing as a beginning-level wildland firefighter with an organized fire department engine or hand crew. Satisfies minimum standards for certification testing set forth by the National Wildland Coordinating Group (NWCG).	Prerequisites: None.	L+L 3.0 3.0 3.0
FSC111	Emergency Vehicle Driver Operator	Emergency vehicle operators training including the problems facing operators; the personal qualities of emergency vehicle operator candidates; legal responsibilities of operators; and physical forces involved in driving an emergency vehicle. Includes hands-on training in an emergency response vehicle	Prerequisites: None.	LEC 2.0 2.0 2.0
FSC112PS	Public Safety Emergency Telecommunications	In-depth coverage of established techniques and procedures for handling routine and emergency public safety telephone calls and radio (contact) communications. Nationally recognized procedures for processing 9-1-1 emergency calls, field unit safety, injury scenarios, and demonstrating positive public relations. Fundamental skills and responsibilities for fire, emergency medical, and law enforcement complaint report processing as well as federal laws regarding proper processing, retention, and dissemination of security information. Definitions of terms unique to fire suppression, emergency medical, and law enforcement situations common within the public safety sector.	Prerequisites: None.	L+L 3.0 3.0 3.0

FSC113	Introduction to Fire Suppression	Introduction to the characteristics and behavior of fire, fire hazard properties of ordinary materials, extinguishing agents, firefighter safety, fire suppression organization and equipment, and basic fire fighting tactics.	Prerequisites: None.	LEC 3.0 3.0 3.0 LAB 0.0 1.0 1.0
FSC114	Hazardous Materials First on the Scene/Awareness Level	Designed to assist first responders involved in potential hazardous materials incident. Provides an overview of capabilities and limitations of first responders in the recognition and detection of hazardous materials, safety considerations, and pre-emergency planning	Prerequisites: None.	LEC 0.5 0.5 0.5
FSC115	Community Emergency Response Team (CERT): Level I	Basic skills, including instruction in teamwork and disaster simulations, needed to help oneself, family, and neighbors in the event of a community disaster in accordance with the Federal Emergency Management Agency (FEMA) guidelines.	Prerequisites: None.	LEC 1.5 1.5 1.5
FSC117	Fire Apparatus	Principles of care, maintenance and operation of fire apparatus and pumps. Includes pump construction and accessories, pumping techniques, power development, and transmission. Driving, troubleshooting and producing effective fire streams	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC118	Fire Hydraulics	Review of basic mathematics. Hydraulic laws and formulas as applied to the fire service. Application of formulas and mental calculations to hydraulic problems, water supply variables, and discharge requirements for pumpers	Prerequisites: None.	LEC 3.0 3.0 3.0

FSC119	Introduction Fire Service Ethics	Ethical issues, standards, and philosophical consideration of moral problems encountered in fire service. Ethical responsibility of fire service personnel and those they serve	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC125	Hazardous Materials Emergency Scene Management	Emphasis on detection and identification of dangers associated with the release of hazardous materials. Step-by-step guide to the management of response resources for the purpose of mitigating a hazardous materials incident	Prerequisites: None.	LEC 1.0 1.0 1.0
FSC126	Refresher Training for Hazardous Materials First Responder Operational	Review of fundamentals of containment, prevention, and knowledge of basic hazard and risk assessment techniques. Topics include protective clothing, containing and controlling specific hazards, vapor suppression, and cooling of tanks. Meets the requirements of Department of Labor Part III; Occupational Safety and Health Act 29; Code of Federal Regulations Part 1910; Hazardous Waste Operational and Emergency Response; Final Rule March 6, 1989 governing Refresher Training.	Prerequisites: A grade of C or better in FSC105.	L+L 1.0 1.0 1.0

FSC127	Codes/Regulations and Contingency Planning for Hazardous Materials Response	Multifaceted approach to the management of a hazardous materials accident at private public sector facility. Includes planning requirements and considerations, fixed-site pre-plan preparation. Overview of federal statutes and national codes used to establish safety, health, and environmental standards for chemical utilization. Highlights Occupational Safety and Health Administration, Department of Transportation, Environmental Protection Agency, Uniform Building Code, Uniform Fire Code, and National Fire Protection Association regulations. Application of laws, regulations, and rules by agencies enforcing legal mandates in chemical compliance, both public and private	Prerequisites: None.	LEC 1.0 1.0 1.0
FSC128	Hazardous Materials Air Monitoring/Breathing Protection	Fundamentals of emergency air monitoring and respiratory protection used in response to hazardous materials releases. Theory and practical application. Includes use of monitoring instruments in conjunction with respiratory protection systems for tactical and risk analysis work; respiratory protection devices and their physiological effects; all state and federal laws pertaining to respiratory protection	Prerequisites: None.	LEC 1.0 1.0 1.0
FSC129	Physical Properties of Hazardous Materials	Practical application of physical properties of hazardous materials for risk and hazard analysis. Working knowledge of chemicals, exposure, and physical property nomenclature for the selection of proper decontamination methods and proper personal protective clothing and equipment	Prerequisites: None.	LEC 1.0 1.0 1.0

FSC130	Fitness for Firefighters/CPAT	Skills and abilities required for entry level position in the fire service including physical ability, and stamina. Opportunity to take the accredited International Association of Fire Fighters (IAFF) Candidate Physical Ability Test (CPAT) at the end of the course at a IAFF licensed agency.	Prerequisites: None.	L+L 1.0 1.5 1.5
FSC131	Introduction to Urban Technical Rescue	Practical application of safe rescue practices for urban technical rescue. Includes ropes and rope systems, trench rescue, confined-space rescue, swiftwater rescue, and rescue from collapsed structures	Prerequisites: None.	L+L 3.0 3.0 3.0
FSC132	Personal Protective Equipment for Emergency Spill Control at Hazardous Materials Incidents	Fundamentals of personal protective equipment and practical application of theoretical information. Includes the design, components, interface, use, application, and materials of chemical protective clothing; thermal limitations of chemical protective clothing in flammable and toxic atmospheres; physiological and psychological effects of wearing these types of garments. Fundamentals of basic emergency spill control, identification, response teams, safety, and decontamination	Prerequisites: None.	LEC 1.0 1.0 1.0
FSC134	Fitness and Conditioning for Firefighters	Overview of all aspects of fitness for current and prospective firefighters. Includes physical and mental aspects of performance for optimal achievement on fire department agility tests and fire fighting tasks; individual conditioning strategies, nutritional guidelines, protective clothing concepts, and basic exercise principles. Pre-employment, evaluation, and lifelong fitness and conditioning.	Prerequisites: None.	L+L 3.0 4.6 4.6



FSC136	Women Firefighter Preparation	Designed for women firefighter candidates. Includes firefighting techniques and procedure, physical/mental conditioning, health concerns, occupational opportunities, and mentorship programs.	Prerequisites: A grade of C or better in FSC134 or Corequisites: FSC134 or permission of Instructor.	L+L 2.0 2.87 2.87
FSC139	Emergency Response to Terrorism	Fundamentals of emergency response to suspected terrorist events. Historical perspective of terrorist activities and methods by which responders can identify and protect themselves and the public from these threats. Coordination of responding agencies.	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC147	Emergency Preparedness	Emergency preparedness related to natural and manmade disasters. Planning concepts and the planning process; awareness and education programs and strategies for the general community as well as business and industries.	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC148	Fundamentals of Emergency Management	Emergency management systems including career opportunities, function, tasks and responsibilities of the emergency management program manager, role of the emergency manager in mitigation, preparedness, response, and recovery. Past civil defense and current emergency management systems since evolution from World War II.	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC149	Hazard Mitigation	Knowledge and skills required to develop programs to reduce losses from future disasters, emergencies, and other extreme events caused by natural and man-made hazards.	Prerequisites: None.	LEC 3.0 3.0 3.0

FSC152	Engine Company Officer	Overview of all aspects of engine company operations including the activities and responsibilities performed by the captain as well as mechanisms for developing a personal supervisory style. Designed for the aspiring company officer or anyone having the opportunity for the role of a company officer	Prerequisites: None.	LEC 1.0 1.0 1.0
FSC153	Minimum Company Standards for Fire Fighters	Comprehensive review of Standard Operating Procedures as they relate to fire ground skills. Emphasis placed on hands on activities allowing participants to practice necessary skills to safely operate on the fire ground and vehicle accident scenes	Successful completion of the Fire Operations Academy and current Candidate Physical Ability Test (CPAT).	L+L 2.0 4.0 4.0
FSC158	Advanced Education for Probationary Firefighter	Preparation to advance skill level of the probationary firefighter. Includes preparation for ambulance operations, driver's training and safety issues, fire ground operations, and fire department organizational structure. Hands-on application of skills and concepts	Prerequisites: Permission of Instructor.	LEC 3.0 3.0 3.0
FSC159	Ladder Operations	Comprehensive training for members of fire department ladder companies. Emphasis on safety, progressive skills, and equipment review.	Prerequisites: Permission of Instructor.	L+L 1.0 1.0 1.0

FSC160	Advanced Driver Training Instructor Certification	Comprehensive instructor certification course based on information and resources from the National Fire Protection Association Standard for Driver Apparatus; the Arizona Department of Transportation Standards, Commercial Drivers License Requirements; General Motors Advanced Drivers Training; National Highway Traffic and Safety Administration; and the Occupational Health and Safety Administration. Covers compensation for inertia, defensive driving skills, and collision avoidance techniques. Differences between driving passenger vehicles top-heavy or high-profile vehicles. Focuses on competency of instructor in ability to teach principles and demonstrate skills necessary to operate fire department apparatus	Prerequisites: Permission of Instructor.	LEC 1.2 1.2 1.2
FSC161	Advanced Driver Training Instructor Re-Certification	Comprehensive recertification for all previously certified Advanced Driver Training (ADT) instructors. Focuses on safety, review of driving skills, comprehension of course dialogue, and instructor presentation skills based on standards established by National Fire Protection Association (1002-Standard for Driver Apparatus); Arizona Department of Transportation, Commercial Drivers License (CDL); General Motors Advanced Driver Training; National Highway Traffic and Safety Administration; and the Occupational Health and Safety Administration	Prerequisites: Permission of Instructor.	LEC 3.0 3.0 3.0

FSC162	Utility Truck Operation	Comprehensive review of skills, responsibilities, apparatus familiarization, mechanical and technical aptitudes, and fire department standard operating procedures specific to safe and effective operation of utility trucks. Focuses on practical application of classroom instruction to insure competency of engineers in performing all utility truck/scene support operator responsibilities	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
FSC163	Respiratory Protection Refresher	Use of respiratory protection, including regulations, hazard recognition, limitations of respirators, maintenance requirements, and importance of annual fit testing. Complies with 29CFR (Code of Federal Regulations) 1910.134 Occupational Safety and Health Administration (OSHA) Regulation for Respiratory Protection refresher training	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
FSC167	Fire Captain Academy	Roles and responsibilities of a company officer within the fire department system with emphasis on practical application and preparation for the role of company officer in a move-up or out-of-class status. Emphasis on customer service, safety, crew development, discipline, community involvement, and specific engine and ladder company officer functions. Includes fire and emergency medical simulations.	Prerequisites: Permission of Instructor.	LEC 6.0 3.0 3.0 LAB 0.0 3.0 3.0
FSC174	Functions of Command	Basic functions of command in the fire service. Includes brief history and future trends of incident command. Analysis of recent local, national, and international tactical and strategic concerns. Utilizes a Command Training Center to provide real-time, computer- and prop-enhanced simulations.	Prerequisites: Permission of Instructor. Corequisites: FSC102.	L+L 2.0 3.0 3.0

FSC175	Fireground Survival	On-deck procedures, focusing on implementation, tasks and responsibilities, logistics, and their impact on tactics, strategy, and scene safety. Assignment of Rapid Intervention Company (RIC) responsibilities to the on-deck company. Fireground survival skills	Prerequisites: Permission of Instructor.	L+L 0.5 0.7 0.7
FSC200	Fire Service Instructor- Level I	Designed to prepare students for Level I Training Officer as defined by the National Fire Protection Association (NFPA) 1041 standards. Includes methods of delivering instructional materials, preparation of lesson plans, instructional aids and evaluation instruments; techniques and strategies for organizing the learning environment and management of recordkeeping are also included.	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC201	Fire Service Instructor- Level II	Designed to prepare students for Level II Training Officer as defined by the National Fire Protection Association (NFPA) 1041 standards. Continued knowledge and skills in methods of delivering instructional materials, preparation of lesson plans, instructional aids and evaluation instruments; techniques and strategies for organizing the learning environment and management of recordkeeping are also included.	Prerequisites: A grade of C or better in FSC200 or permission of Program Director or Instructor.	LEC 3 3 3
FSC202	Supervisory Training for Firefighters	Administrative methods applied to the fire service, departmental organization, and personnel management. Includes fire alarm signaling systems, fire service planning, and relationships with other city departments	Prerequisites: None.	LEC 3.0 3.0 3.0

FSC204	Firefighting Tactics and Strategy	Methods of coordinating personnel, equipment, and apparatus on the fireground. Practical methods of controlling and extinguishing structural and other types of fires. Includes simulation exercises.	Prerequisites: A grade of C or better in FSC113 or permission of Instructor or current employment as a firefighter and/or Firefighter I and II Certification and/or related experience as determined by the Program Director.	LEC 3 3 3
FSC205	Command Strategies for Major Emergencies	Effective methods of managing major emergency incidents including multiple alarm structural fires, high rise fires, major brush fires, complex hazardous materials incidents and multi-casualty medical incidents. Includes incidents that require the commitment of resources based on a transitional situation and/or managing the effective interaction between numerous agencies to achieve control	Prerequisites: A grade of C or better in FSC204.	LEC 3.0 3.0 3.0
FSC208	Firefighter Safety and Building Construction	Actions necessary to provide for the safety of firefighters operating on the fireground. Effects that fire and heat may have on various types of building construction resulting in the loss of structural integrity. Includes signs and symptoms of structural damage.	Prerequisites: A grade of C or better in FSC113 or permission of Instructor or current employment as a firefighter and/or Firefighter I and II Certification and/or related experience as determined by the Program Director.	LEC 3 3 3
FSC209	Fire Investigation I	Methods of determining point of fire origin, path of fire travel, and fire cause. Includes recognizing and preserving evidence; interviewing witnesses; arson laws and types of arson fires; and court testimony, reports, and records.	Prerequisites: None.	LEC 3.0 3.0 3.0
FSC209LL	Fire Investigation I Lab	Practical application of fire investigation techniques. Includes use of the scientific method to investigate various types of fires as well as fire patterns, explosions and evidence documentation. Also covers scene management and examination procedures in addition to report writing and spoliation concerns.	Prerequisites: A grade of C or better in FSC209.	LAB 1.0 2.0 2.0

FSC210	Fire Investigation II	Focus on practical skills for fire investigators. Emphasis on hands-on application with practice examining and recording the fire/arson scene. Includes class room and field exercises on each section.	Prerequisites: A grade of C or better in FSC209 or permission of Instructor.	L+L 3.0 3.0 3.0
FSC211	Fire Investigation III	Focus on case building for fire investigators. Emphasis on hands-on application, practice examining and recording the fire/arson scene. Includes field exercises with arson task force to investigate a crime scene.	Prerequisites: A grade of C or better in FSC210 or permission of Instructor.	L+L 3.0 3.0 3.0
FSC212	Fire Investigation IV	Skills and information for those responsible for fire investigation. Focus on courtroom and testimony. Includes continuing arson task force team assignment.	Prerequisites: A grade of C or better in FSC211 or permission of Instructor.	L+L 3.0 3.0 3.0
FSC213	Hazard Categorization (HAZ CAT)	Fundamentals of basic chemical identification for field application. Includes demonstration of sampling techniques, safety, key charts, test descriptions and use, and flow charts for tactical application at hazardous materials incidents	Prerequisites: None.	LEC 1.0 1.0 1.0
FSC214	Human Resource Management in Fire Service	Management of fire service personnel functions. Includes selection procedures, employee discipline, performance ratings, elements of supervision. Labor relations and related personnel responsibilities	Prerequisites: A grade of C or better in FSC202 or four years in the fire service.	LEC 3.0 3.0 3.0
FSC215	Customer Service in the Public Sector	Examines the personal and practical skills needed to enhance customer service in the public sector with an emphasis on application, basic management requirements, and training	Prerequisites: None.	LEC 3.0 3.0 3.0

FSC216	Fundamentals of Flammable Hazardous Materials	Fundamentals of chemistry used in fire service, chemistry of flammable hazardous materials, containers used to store and transport flammable hazardous materials, and equipment and materials used in controlling emergencies involving flammables. Also includes tactics for hazardous materials emergencies, and laws at federal, state, and local levels pertaining to the use, storage, and transportation of hazardous materials and hazardous wastes.	Prerequisites: A grade of C or better in FSC105.	LEC 3.0 3.0 3.0
FSC217	Dangerous and Explosive Hazardous Materials	The chemistry of reactive and unstable hazardous materials, the toxicology of dangerous chemicals, and the measures taken to protect responders, the community, and the environment of chemical accidents. Also includes an introduction to field sampling of unknown substances.	Prerequisites: A grade of C or better in FSC216.	LEC 3.0 3.0 3.0
FSC220	Fire Officer	Administrative methods applied to the fire service, departmental organization, and personnel management. Includes Incident Management System, fire service planning, and relationships with other agency departments.	Prerequisites: Full time Certified Fire Fighter I & II, or Fire Instructor I, or permission of Instructor.	L+L 5.0 6.0 6.0
FSC221	Ladder Company Officer	Overview of all aspects of ladder company operations including activities, expectations, and responsibilities required of the ladder captain. Designed for the company officer who aspires to the role of ladder company officer	Prerequisites: None.	LEC 1.0 1.0 1.0
FSC224	Incident Command Systems	Methods for managing emergency incidents including command, control and coordination of response to all types of incidents, including hazardous materials, natural hazards, fire and multiple causality incidents. Emphasis on stabilization and protecting life, property, and environment	Prerequisites: None.	LEC 3.0 3.0 3.0



FSC225	Hazard Zone Command	Provides the knowledge, skills and abilities for incident commanders to manage local, National Incident Management System (NIMS) Type 4 and 5 incidents. Prepares Fire Service Company and Command Officers to standardize local incident operations across their organization. The Hazard Zone Command course includes theory and simulation-based case studies. After successful completion of the course, the student will receive Blue Card certification for a period of three (3) years.	Prerequisites: Firefighter 1 and 2 certification and (a minimum of 5 years of fire service field experience or permission of Instructor).	L+L 5.0 6.0 6.0
FSC226	Incident Safety Officer	Comprehensive review of the critical factors that threaten the safety and well being of operating firefighting crews with an emphasis on the role an Incident Safety Officer has in recognizing, minimizing and mitigating threats. Focus on the Principles and types of construction, building dating, Smoke and Fire size-up, unique building types and standard company operations within Incident Management System providing the framework for effective Incident Safety Officer actions and overall impact on fire ground safety. Safety of Fire companies operating on every other type of incident in which a Command Structure is established, focus on the scope of an Incident Safety Officer	Rank of Fire Captain or Chief Officer.	LEC 3.0 3.0 3.0
FSC230	Fire Officer Leadership II	Management techniques which develop leadership and leadership effectiveness. Written and verbal communication skills, fire service excellence goals, counseling and problem solving methods. Role-playing and case studies emphasized throughout	Prerequisites: Permission of Instructor.	LEC 3.0 3.0 3.0

FSC231	Battalion Chief Academy	Examine the many roles and responsibilities required of a chief officer. Manage emergency incidents, explore personal and professional growth, view department issues more globally, manage personnel more effectively, manage conflict resolution for positive outcomes, and define leadership.	Prerequisites: None. FSC202 and FSC204 are suggested but not required.	L+L 3.0 5.0 5.0
FSC234	Fitness and Wellness for Firefighter Candidates	Focus on fitness and wellness for firefighter candidates.	Prerequisites: Permission of Instructor.	L+L 3.0 4.6 4.6
FSC238	Vehicular Extrication and Patient Stabilization	Participative course designed for the Emergency Medical Technicians (EMT). Incorporates new knowledge and skills necessary to access, extricate, and care for victims of crash incidents. Provides exposure to scene management, including size-up, disentanglement, victim stabilization for single and multi-victim situations, hazardous materials incidents, integration of local emergency medical services (EMS) for patient assessment and management, and standard operating procedures to selected victim scenarios	Basic EMT certification current enrollment in an EMT-Basic program nurse with emergency department experience or law enforcement personnel or permission of Instructor.	LEC 2.0 2.0 2.0
FSC240	Incident Command Officer	Preparation of Incident Command officers in handling local community's emergency situations	Chief Officer or permission of Instructor.	L+L 3.0 3.0 3.0
FSC258	Victimology and Crisis Management	Victimology, the criminal justice system, techniques of crisis intervention, and the importance of a multicultural and global perspective. Includes sexual assault, family violence, post-traumatic stress disorder, the role of substance abuse, effective coping skills, appropriate community resources and the responsiveness of the justice system.	Prerequisites: None.	LEC 3.0 3.0 3.0

FSC259	Advanced Ladder Operations	Comprehensive training for members of fire department ladder companies. Emphasis on application of techniques, incorporating safety, progressive skills, and equipment review.	Prerequisites: Permission of Instructor.	L+L 8.0 8.5 8.5
FSC260	Technical Rope Rescue (RR) 1, 2, 3	Concepts, techniques, and skills needed to support technical rope rescue. Meets Arizona Fire Marshal Office requirements for RR1, RR2, RR3 and National Fire Protection Association (NFPA) 1670 Operational Rope Rescue	Prerequisites: A grade of C or better in FSC131 or permission of Instructor.	L+L 3.0 3.6 3.6
FSC261	National Fire Protection Agency Rope Technician	Advanced anchor construction, use of elevated anchor points on difficult edges, horizontal rope systems, and study of force multipliers commonly experienced during high angle rope rescue. Meets the certification requirements for the NFPA (National Fire Protection Agency) 1670 for Operational Rope Rescue and NFPA 1006 for Technical Rescue Rope Technician.	Prerequisites: A grade of C or better in FSC260 or (the Office of the Arizona State Fire Marshal's Ropes 1 2 and 3 class) or permission of Instructor.	L+L 3.0 3.6 3.6
FSC271	Aircraft Rescue Fire Fighter (ARFF)-Basic	Basic level course for aircraft rescue firefighters. Preparation for performing standard aircraft rescue and firefighting procedures, including roles and responsibilities, basic airport configuration and design, aircraft types, hazardous cargo, safety precautions and use of materials.	Prerequisites: Permission of Program Director.	LEC 3.0 3.0 3.0
FSC272	Aircraft Rescue Fire Fighter (ARFF) - Advanced	Advanced level course for certification of aircraft rescue firefighters. Integrating, performing and evaluation of standard firefighting skills for airport configuration and design, aircraft types, hazardous cargo, safety procedures and materials used.	Prerequisites: A grade of C or better in FSC271.	L+L 3.0 4.0 4.0

FSC273	Aircraft Rescue Fire Fighter (ARFF)- Driver	Driver training course for aircraft rescue firefighters. Preparation for performing standard driving procedures for aircraft rescue and firefighting. Includes but not limited to proper handling of apparatus, equipment and tools used in aircraft rescues and communication with tower and other response units.	Prerequisites: A grade of C or better in (FSC272 or current employment as an airport firefighter) and permission of Instructor.	L+L 2.0 2.5 2.5
FSC274	Aircraft Rescue Fire Fighter (ARFF) - Incident Command	Incident command certification of aircraft rescue firefighter performing and evaluating standard firefighting skills for airport firefighters. Includes but not limited to aircraft types, hazardous cargo, and safety procedures and materials.	Prerequisites: A grade of C or better in FSC273 or permission of Program Director.	LEC 3.0 4.0 3.7
FSC275	Aircraft Rescue Fire Fighter (ARFF) Certification Renewal	Designed to provide recertification for the performance of standard aircraft rescue and firefighting procedures and skills for airport firefighters. Includes but not limited to airport configuration and design, aircraft types, hazardous cargo, safety procedures and materials used.	Prerequisites: A grade of C or better in (FSC272 or current employment as an airport firefighter) and permission of Instructor.	L+L 3.0 4.0 4.0
FSC282AA	Service-Learning Experience in Fire Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
FSC282AB	Service-Learning Experience in Fire Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
FSC282AC	Service-Learning Experience in Fire Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
FSC290AA	Arson Investigation	Investigative techniques used in analyzing suspected arson scenes, motives, and collection of physical evidence	Prerequisites: None.	LEC 1.0 1.0 1.0

FSC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
FSC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
FSC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

FSC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
FSC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
FSC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

FSC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
FST175	Food Science Product Development I	A study of food production with hands-on experience in all aspects of developing, producing, and marketing food products for food science majors.	Prerequisites: None.	LEC 3.0 3.0 3.0
FST263	Principles of Food Science	The study of scientific principles involved in the development, production, and evaluation of food.	Prerequisites: None.	L+L 4.0 4.0 4.0
FST264	Protein Science	The study of natural and synthetic proteins in food science with a focus on meat.	Prerequisites: A grade of C or better in FST263.	L+L 4.0 4.0 4.0
FST265	Microbiology of Foods	The study of microorganisms and their relationship to food development, production, processing, and preservation.	Prerequisites: A grade of C or better in (BIO156 or BIO156XT or BIO181 or BIO181XT or FST263) and (CHM130 or higher).	L+L 4.0 4.0 4.0
FST266	Fermentation in Food Science	A study of the biochemical principles and processes of fermentation in food science.	Prerequisites: A grade of C or better in (BIO156 or BIO156XT or BIO181 or BIO181XT or FST263) and (CHM230 or CHM235).	LEC 4.0 4.0 4.0
FST267	Analysis of Food	A study of biochemical analysis of foods used in product development, evaluation, and quality control.	Prerequisites: A grade of C or better in (BIO156 or BIO156XT or BIO181 or BIO181XT or FST263) and (CHM130 or higher).	L+L 4.0 4.0 4.0
FST275	Food Science Product Development II	Advanced study of food production and analysis of quality, safety, efficiency and cost through hands-on experience in developing, producing and marketing food products.	Prerequisites: None.	LEC 3.0 3.0 3.0

FST298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
FST298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
FST298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GBS103	Principles of Banking	History, characteristics and significance of American banking system, includes types of accounts, banking services and the relationship of commercial banks to their depositors	Prerequisites: None.	LEC 3.0 3.0 3.0



GBS104	Quality Telephone Techniques	Specific telephone communication techniques for delivering professional customer service	Prerequisites: None.	LEC 1.0 1.0 1.0
GBS110	Human Relations in Business and Industry	Exploration of fundamental theories and concepts of human relations in business and industry. Particular emphasis is placed on developing effective interpersonal relationships and leadership skills within an organization	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS120	Workplace Communication Skills	Reviews planning, organization, development, and evaluation of written and oral communication in business settings, including informative and persuasive messages.	Prerequisites: None.	L+L 3.0 3.0 3.0
GBS126	Writing Resumes	Planning, organizing, and writing a professional resume. Focus on presentation skills including format and language	Prerequisites: None.	L+L 1.0 1.7 1.7
GBS131	Business Calculations	Review of basic arithmetic and application of mathematics to business problems, includes percentage, interest, discount, and markups	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS132	Personal and Family Financial Security	Principles and practices of personal and family financial planning, includes savings, budgeting, credit, buying versus renting, and general principles of consumerism.	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS151	Introduction to Business	Characteristics and activities of current local, national, and international business. An overview of economics, marketing, management and finance	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS175	Professional Development	Examines personal qualities and professional skills needed to find a good job. Explores techniques required to build a successful career	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS200	Understanding the Business Environment	Provides an overview of the major external factors and issues affecting the contemporary business environment	Prerequisites: None.	L+L 3.0 3.0 3.0

GBS205	Legal, Ethical, and Regulatory Issues in Business	Legal theories, ethical issues and regulatory climate affecting business policies and decisions.	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS206	Business Law (UCC)	Legal and ethical aspects of contracts, sales, commercial paper, secured transactions, documents of title, letter of credit, bank deposits, and collections	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS207	Business Law (General Corporate)	Legal and ethical aspects of agency, partnerships, corporations, bankruptcy, antitrust, securities, and other regulations of business	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS211	Legal, Ethical and Regulatory Issues of the Internet Studies	Legal, ethical and regulatory issues of the Internet environment, including personal, commercial and business electronic transactions in cyberspace.	Prerequisites: None.	L+L 3.0 4.0 4.0
GBS215	Business, Law and Society	Overview of the philosophical and legal framework of business. Stresses the basic concepts of business entities, contracts, accountability and relationships, with an emphasis on the social context in which these concepts operate. Incorporates the concepts of law and ethics.	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS220	Quantitative Methods in Business	Business applications of quantitative optimization methods in operations management decisions.	Prerequisites: A grade of C or better in (MAT150 or MAT151 or MAT152) or satisfactory score on the District math placement test.	LEC 3.0 3.0 3.0
GBS221	Business Statistics	Business applications of descriptive and inferential statistics, measurement of relationships, and statistical process management. Includes the use of spreadsheet software for business statistical analysis.	Prerequisites: A grade of C or better in GBS220 or MAT217 or MAT218.	LEC 3.0 3.0 3.0
GBS233	Business Communication	Internal and external business communications, including verbal and nonverbal techniques	Prerequisites: A grade of C or better in ENG101 or ENG107 with grade of C or better or permission of Department or Division.	LEC 3.0 3.0 3.0

GBS261	Investments I	Evaluation of various investment forms including study of inflation, taxation, government securities, stocks and bonds, real estate and retirement plans.	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS270AA	Business Internship	General business work experience in a business or industry. Eighty hours of designated work per credit per semester. Maximum of 3 credits allowed	Prerequisites: Permission of Department or Division.	LAB 1.0 1.0 0.0
GBS270AB	Business Internship	General business work experience in a business or industry. Eighty hours of designated work per credit totaling 160 hours per semester. Maximum of 3 credits allowed	Prerequisites: Permission of Department or Division.	LAB 2.0 2.0 0.0
GBS270AC	Business Internship	General business work experience in a business or industry. Eighty hours of designated work per credit.	Prerequisites: Permission of Department or Division.	LAB 3.0 3.0 0.0
GBS282AA	Volunteerism General Business: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: A grade of C or better in GBS151 and permission of Instructor.	LAB 1.0 1.0 0.0
GBS282AB	Volunteerism General Business: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: A grade of C or better in GBS151 and permission of Instructor.	LAB 2.0 2.0 0.0
GBS282AC	Volunteerism General Business: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: A grade of C or better in GBS151 and permission of Instructor.	LAB 3.0 3.0 0.0
GBS294	Consumer Credit	Consumer lending by financial institutions	Prerequisites: None.	LEC 3.0 3.0 3.0
GBS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

GBS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
GBS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
GBS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

GBS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
GBS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
GBS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GCO100	Introduction to Golf Course Operations	Overview of golf course operations. Includes layout of a golf course, general roles of employees, and game play. Emphasis on historic, economic, and social effects of golf in society	Prerequisites: None.	LEC 1.0 1.0 1.0

GCO131	Horticulture	Identification and classification of common plants in the Southwest. Study of basic plant structure, growth processes, reproduction and environmental influences on plant growth processes.	Prerequisites: None.	LEC 2.0 2.0 2.0
GCO132	Landscape Management	Identification of plants commonly used in Arizona landscaping. Includes trees, shrubs, vines, flowers, and ground covers. Techniques for planting, watering, and fertilizing recreational grounds. Pest control planning	Prerequisites: None.	L+L 2.0 3.0 3.0
GCO134	Irrigation and Water Management	Irrigation and water management systems used on recreational grounds. Installation and repairs of sprinklers, valves, piping, electrical systems, and pumps	Prerequisites: None.	L+L 2.0 3.0 3.0
GCO137	Turfgrass Management	Identification of turfgrasses used in the Southwest. Establishment and maintenance of turfgrasses on recreational grounds	Prerequisites: None.	L+L 2.0 3.0 3.0
GCO139	Pro Shop Merchandising	Focus on principles of merchandising related to a pro shop. Includes components of display and visual presentation of merchandise	Prerequisites: None.	LEC 1.0 1.0 1.0
GCO146	Equipment Maintenance and Repair	Additional principles of mechanics as applied to turfgrass and hand-held equipment. Includes equipment components such as engines, motors, hydraulics, and fuel lubricating systems. Operation, maintenance, and repair of tractors, mowers, and motorized carts. Stocking and maintaining a parts and supply inventory system. Application of federal and maintenance and repair shop safety regulations	Prerequisites: A grade of C or better in GCO145.	L+L 3.0 4.0 4.0
GCO211	Pro Shop Management Practicum	Application of pro shop management knowledge and skills at a practicum site.	Prerequisites: Permission of Instructor.	LAB 1.0 4.75 4.75
GCO212	Turf and Irrigation Practicum	Application of turf and irrigation technology, knowledge, and skills at a practicum site.	Prerequisites: Permission of Instructor.	LAB 1.0 4.75 4.75

GCO271AC	Recreational Resources and Facilities Management Internship	Work experience in a recreational resources and facilities setting. Fifteen (15) hours of work weekly. Supervision and evaluation by internship coordinator.	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 0.0
GCO298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
GCO298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
GCO298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

GCU102	Introduction to Human Geography	Systematic study of human use of the earth. Spatial organization of economic, social, political, and perceptual environments	Prerequisites: None.	LEC 3.0 3.0 3.0
GCU113	United States and Arizona Social Studies	Overview of government, history, and geography of the United States and Arizona. Includes the relationship of government to the United States economic system as well as the influences and developments that have shaped U.S. and Arizona history. Also covers geographical systems, regions, and study techniques.	Prerequisites: None.	LEC 3.0 3.0 3.0
GCU120	Arizona's Water Issues	History and development of Arizona's arid-land water use: sources, distribution, methods of use, floods, droughts, water law and environmental concerns	Prerequisites: None.	LEC 1.0 1.0 1.0
GCU121	World Geography I: Eastern Hemisphere	Description and analysis of spatial variations in culture, social, economic, and political phenomena in major world regions. Emphasis on the major cultural realms of Europe, North Africa, and Asia.	Prerequisites: None.	LEC 3.0 3.0 3.0
GCU122	World Geography II: Western Hemisphere	Description and analysis of variations in social, economic, and political phenomena in major world regions. Emphasis on Sub-Saharan Africa, Latin America, and Anglo America	Prerequisites: None.	LEC 3.0 3.0 3.0
GCU141	Introduction to Economic Geography	Production, distribution and consumption of various types of commodities of the world and relationships to the activities of man	Prerequisites: None.	LEC 3.0 3.0 3.0



GCU194	Special Topics in Cultural Geography	Detailed study of specific regions, topics, or current issues in cultural geography. Topics may include origins, diffusion, and division of cultural areas. Examines cultural patterns and spatial organization which may include population, religion, economic, social and political characteristics. Studies interrelationships between humans and the physical environment (i.e. environmental ecosystems, physical processes and natural resources).	Prerequisites: None.	LEC 3.0 3.0 3.0
GCU221	Arizona Geography	The historical to modern development of Arizona. The interplay between the physical, cultural and economic factors affecting Arizona today	Prerequisites: None.	LEC 3.0 3.0 3.0
GCU223	Geography of Latin America	Spatial overview of the physical, historical, social, and economic characteristics of South, Middle, and Caribbean America.	Prerequisites: None.	LEC 3.0 3.0 3.0
GCU282AA	Service-Learning Experience in Cultural Geography	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
GCU282AB	Service-Learning Experience in Cultural Geography	Unpaid Service-Learning (SL) experience completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
GCU282AC	Service-Learning Experience in Cultural Geography	Unpaid Service-Learning field experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
GCU298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

GCU298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
GCU298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GER085AA	Speedy German I	Basic grammar and vocabulary of the German language to practice listening and speaking skills	Prerequisites: None.	LEC 1.0 1.0 1.0
GER085AB	Speedy German II	Intermediate vocabulary, German syntax and inflections to further develop conversational skills in German.	Prerequisites: A grade of C or better in GER085AA. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
GER085AC	Speedy German III	Continued development of German speaking and listening skills to express opinions and thoughts on a variety of subjects.	Prerequisites: A grade of C or better in GER085AB. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
GER101	Elementary German I	Basic grammar, pronunciation and vocabulary of the German language. Includes the study of German culture, practice of listening, speaking, reading and writing skills.	Prerequisites: None.	LEC 4.0 4.0 4.0

GER101AA	Elementary German I	Basic grammar, pronunciation and vocabulary of the German language. Includes the study of German culture, practice of listening, speaking, reading and writing skills.	Prerequisites: None.	L+L 4.0 5.0 5.0
GER102	Elementary German II	Continued study of grammar and vocabulary of the German language along with the study of German culture. Emphasis on German language skills.	Prerequisites: A grade of C or better in GER101 or GER101AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
GER102AA	Elementary German II	Continued study of grammar and vocabulary of the German language along with the study of German culture. Emphasis on German language skills.	Prerequisites: A grade of C or better in GER101 or GER101AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 4.0 5.0 5.0
GER115	Beginning German Conversation I	Conversational German. Basic sentence structure, pronunciation and vocabulary necessary to develop speaking ability in German. Designed for students seeking speaking and listening abilities with little emphasis on grammar	Prerequisites: None.	LEC 3.0 3.0 3.0
GER116	Beginning German Conversation II	Continued development of speaking and listening skills for effective communication in German.	Prerequisites: A grade of C or better in GER115 or one year of high school German or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
GER201	Intermediate German I	Review of essential grammar of the German language and study of the German culture. Continued practice and development of reading, writing, and speaking skills.	Prerequisites: A grade of C or better in GER102 or GER102AA or two years of high school German or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0

GER202	Intermediate German II	Continued development of German language skills and continued study of the German culture.	Prerequisites: A grade of C or better in GER201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
GER226	Intermediate German Conversation II	Further development of skills in conversational German.	Three semesters of high school German or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
GER296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
GER296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

GER296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
GER296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
GER298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

GER298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
GER298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GIS205	Geographic Information Technologies	Introduces modern geographic information technologies, including cartography, Geographic Information System (GIS), remote sensing, global positioning systems, and statistical analyses.	Prerequisites: None.	LEC 3.0 3.0 3.0
GIS211	Geographic Information Science I	Introduces students to digital map creation including vector and raster data, map elements, and design, symbology, and the geo database using Environmental Systems Research Institute (ESRI) desktop and online mapping environments.	Prerequisites: A grade of C or better in GIS205 or permission of Instructor.	L+L 4 4 4

GIS220	Introduction to ArcPy Scripting	Students will learn how to automate geoprocessing tasks and apply scripting fundamentals using the ArcGIS Python-based scripting language ArcPy. The course emphasizes problem solving using geoprocessing analysis, identifying system integration and data management tasks, determining programming tools and order based upon workflow analysis.	Prerequisites: A grade of C or better in GIS211.	LEC 3.0 3.0 3.0
GIS222	Geographic Information Science II	Geographic Information Science (GIS) as a basis for microcomputer spatial analysis and synthesis. Includes digitizing, database organization, spatial retrieval and graphics.	Prerequisites: A grade of C or better in GIS211 or permission of Instructor.	LEC 3.0 3.0 3.0
GIS223	Introduction to Digital Image Processing	Uses and application of remote sensing and imagery in Geographic Information Systems (GIS). Uses and application of Global Positioning Systems to GIS and remote sensing.	Prerequisites: None.	LEC 3.0 3.0 3.0
GLG101	Introduction to Geology I - Physical Lecture	Introduction to Earth's materials, surface and internal geologic processes, plate tectonics and geologic time.	Prerequisites: None.	LEC 3.0 3.0 3.0
GLG101IN	Introduction to Geology I - Physical	Introduction to Earth's materials, surface and internal geologic processes, plate tectonics and geologic time. Includes practical experience in rock and mineral identification, topographic maps, and applied problems in geology.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
GLG102	Introduction to Geology II - Historical Lecture	The origin and history of the Earth, its dynamic geographic and climatic changes. Evolution and sequence of life recorded in the fossil record; tectonic evolution of major continents through time.	Prerequisites: None.	LEC 3.0 3.0 3.0
GLG102IN	Introduction to Geology II - Historical	The origin and history of the Earth, its dynamic geographic and climatic changes. Evolution and sequence of life recorded in the fossil record; tectonic evolution of major continents through time.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

GLG103	Introduction to Geology I - Physical Lab	Includes practical experience in rock and mineral identification, topographic maps, and applied problems in geology.	Prerequisites: None.	LAB 1.0 3.0 3.0
GLG104	Introduction to Geology II - Historical Lab	The study of minerals, rocks, fossils, geologic maps and structures.	Prerequisites: None.	LAB 1.0 3.0 3.0
GLG105	Introduction to Planetary Science	A survey of solar system objects and their geologic evolution, surfaces, interiors, and atmospheres, and the methods used to study them; weekly laboratory for data analysis and experiments; possible weekend field trip	Prerequisites: None.	L+L 4.0 6.0 6.0
GLG106	Life in the Universe	Introduction to the search for life in the universe for the non-science major. Earth's location in space and time, nature of life, light and the spectrum, origin and history of the universe, origin of life on Earth and the possibility of life on other planets.	Prerequisites: A grade of C or better in MAT090 or MAT091 or MAT092 or completion of higher level mathematics course, or satisfactory score on placement exam.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
GLG107	Life in the Universe Laboratory	Astronomy, Biology, and Planetary Science laboratory.	Prerequisites: A grade of C or better in AST/GLG106 and permission of Instructor or Department or Division.	LAB 1.0 3.0 3.0
GLG110	Geological Disasters and the Environment	Acquaints students with the use and importance of geological studies as they apply to the interactions between people and the earth. Includes geological processes and hazards such as earthquakes, volcanoes, floods and landslides. Examines environmental impact and use of mineral and energy resources.	Prerequisites: None.	LEC 3.0 3.0 3.0
GLG110IN	Geological Disasters and the Environment	Acquaints students with the use and importance of geological studies as they apply to the interactions between people and the Earth. Includes geological processes and hazards such as earthquakes, volcanoes, floods and landslides. Examines environmental impact and use of mineral and energy resources.	Prerequisites: None	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0



GLG111	Geological Disasters and the Environment Lab	Introduction to geological processes and concepts. Application of basic geologic knowledge to evaluate, interpret and propose solutions for a variety of current and past geology-related environmental disasters and hazards.	Prerequisites: None.	LAB 1.0 3.0 3.0
GLG121	Geology of the Grand Canyon	Introduction to the physiography and geology of the Grand Canyon. Includes a hiking field trip to the Grand Canyon.	Prerequisites: None. GLG103 suggested but not required.	L+L 1.0 2.0 2.0
GLG140	Introduction to Oceanography	Investigates the marine environment in terms of basic scientific concepts. Emphasizes the impact of ocean pollutants, climate fluctuations, and resources from the sea	Prerequisites: None.	LEC 3.0 3.0 3.0
GLG140IN	Introduction to Oceanography	Introduces students to the physical, chemical, and geological conditions that regulate global ocean phenomena. Topics covered include history of oceanography, physical and chemical properties of ocean water, air-sea interactions, current, wave, and tidal phenomena, origins of the oceans, geologic processes and features, biological influences, and environmental issues. Laboratory exercises are included to provide experimental learning opportunities.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
GLG229AB	Field Studies for Educators	Field trips to selected geological areas in Arizona in order to collect and/or observe geological phenomena. Designed for pre-college teachers	Prerequisites: None.	LAB 2.0 10.0 2.0
GLG229AC	Field Studies for Educators	Field trips to selected geological areas in Arizona in order to collect and/or observe geological phenomena. Designed for pre-college teachers	Prerequisites: None.	LAB 3.0 15.0 3.0

GLG230AA	Field Geology of the Southwest	Field trips to selected areas in the Southwest, such as Arizona, Utah, California, and Sonora to observe and interpret various geological features and phenomena.	Prerequisites: None. GLG103 suggested but not required.	LAB 1.0 5.0 1.0
GLG230AB	Field Geology of the Southwest	Field trips to selected areas in the Southwest, such as Arizona, Utah, California, and Sonora to observe and interpret various geological features and phenomena.	Prerequisites: None. GLG103 suggested but not required.	LAB 2.0 10.0 2.0
GLG230AC	Field Geology of the Southwest	Field trips to selected areas in the Southwest, such as Arizona, Utah, California, and Sonora to observe and interpret various geological features and phenomena.	Prerequisites: None. GLG103 suggested but not required.	LAB 3.0 15.0 3.0
GLG231AA	Special Topics in Geology	Exploration of important topics in geology. Specific topic varies.	Prerequisites: None.	LEC 0.5 0.5 0.5
GLG231AB	Special Topics in Geology	Exploration of important topics in geology. Specific topic varies.	Prerequisites: None.	LEC 1.0 1.0 1.0
GLG231AC	Special Topics in Geology	Exploration of important topics in geology. Specific topic varies.	Prerequisites: None.	LEC 2.0 2.0 2.0
GLG231AD	Special Topics in Geology	Exploration of important topics in geology. Specific topic varies.	Prerequisites: None.	LEC 3.0 3.0 3.0
GLG280	Geology of Arizona Lecture	Acquaints students with the physical and historical geology of Arizona, including the origin of present-day land forms and outstanding modern geologic features and processes now in operation	Prerequisites: None.	LEC 3.0 3.0 3.0
GLG281	Geology of Arizona Lab	May accompany GLG280. Examples of specific geologic processes and local areas. May require field trips	Prerequisites: None.	LAB 1.0 3.0 3.0
GLG282AA	Volunteerism for Geology: A Service Learning Experience	Service-learning field experience within human service organizations, government offices, public schools, or hospitals.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0

GLG296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
GLG296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
GLG296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

GLG296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
GLG298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
GLG298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

GLG298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GLO298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
GLO298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

GLO298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GLZ101	Glaziers: Tools, Machinery and Safety	Hand and power tool usage and safety specific to the glazier trades. Inspection techniques, care and use of electrical cords and extension cords. Proper and safe methods of working with electricity, electrical hazards and emergency treatment. Prevention of electrical shock and grounding. Safe and proper use of and maintenance of glazier shop machinery and equipment	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
GLZ105	Glazier Blueprints	Read and interpret blueprints and detail drawings to determine glazing requirements. Interior and exterior glazing requirements for large buildings, a group of buildings, an industrial building, a building complex, and hospitals	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
GLZ107	Storefronts	Design and interpretation of drawings and cross section diagrams. Application of drawing and diagrams. Architectural metals. Fabrication, measurements, cuts, preparation, assembly, installation, glaze and scale storefronts	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

GLZ109	Ladders and Scaffolding	Duty ratings for ladders. Ladder components, care and maintenance. Safe set up and usage of ladders. Parts, assembly and safe usage of ground based scaffolds. Suspended, mobile, power, outrigger and built-on scaffolds. Protective equipment, devices and clothing	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
GLZ111	Glaziers: Transits and Levels	Elements of transit. Specific types of transits and levels. Maintenance and care of transits and levels. Set up of transits. Three and four screw methods of leveling transits. Use of glazier's tape measures and leveling rods. Direct and retrograde vernier readings using horizontal and vertical scales. Common field signals. Instrument set up and benchmark use. Rod man and operator positions. Specific uses of transits and levels	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
GLZ113	Glaziers: Sealants	Sealant terminology, selection, forms, classifications, properties and types. Joint design. Substrate preparation. Solvent cleaning on specific surfaces and finishes. Sealant usage and application. Compatibility, performance, shelf life, failure and testing. Occupational Safety and Health Administration (OSHA) rules and regulations. Types of structural glazing, performance, and advantages. Safety factors	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

GLZ203	Glaziers: Doors	Structure and entrance requirements of aluminum entrances. Installation preparation and finish of aluminum entrances. Lock and bolt types, components, and installation. Standard and custom installation of aquariums, showers, tub enclosure and showcase doors. Panic hardware types, installation, and service. Paneline, Door-O-Matic, and Adams Rite exit device installation and service. Revolving door installation, service and safety	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
GLZ205	Glaziers: Glass, Plastics and Mirrors	Manufacturing, handling, and installing mirrors. Mirror job layout, mounting, and hardware. Handling, cleaning, coloring and storage of anodized and painted finishes. Safety, and performance for glass replacement and putty glazing. Basics of thermal expansion, fire precautions, and handling of plastics. Plastic mirrors and windows. Insulated and high performance glass: types, construction, handling, storage, safety, installation, and fabrication. Cutting, testing, installing, and handling of security glazing. National Auto Glass Specifications. Cutting, cementing, and soldering of stained glass	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
GLZ210	Introduction to Curtainwall	Curtainwall basics and safety issues. High rise and high span curtainwall construction and installation. Methods of curtainwall layout and problem solving. Pressurewall job sequence. Spandrel and Architectural Panel systems, Ribbon Window systems panels, installation and construction. Rigging and hoisting knots, loops, hitch ties, and hand signals	Registered Apprentice status with the Arizona Architectural Metal and Glass Workers Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0



GPH111	Introduction to Physical Geography Lecture	Earth's physical processes and impacts on human environments via the atmosphere, biosphere, lithosphere and hydrosphere. Topics include severe weather, climate change, biomes and ecosystems, landform processes; mountain building and erosion by rivers, glaciers, waves and wind.	Prerequisites: None.	LEC 3.0 3.0 3.0
GPH112	Introduction to Physical Geography Lab	Earth's physical processes and impacts on the human environment via the atmosphere, biosphere, lithosphere and hydrosphere. Practical experiences include earth-sun relationships, weather, climate, biomes, landform processes; mountain building and erosion by rivers, glaciers, waves and wind, topographic maps.	Prerequisites: A grade of C or better in GPH111 or Corequisites: GPH111.	LAB 1.0 3.0 3.0
GPH113	Introduction to Physical Geography	Earth's physical processes and impacts on human environments via the atmosphere, biosphere, lithosphere and hydrosphere. Topics and practical experiences include severe weather, climate change, biomes and ecosystems, landform processes; mountain building and erosion by rivers, glaciers, waves and wind, topographic maps.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
GPH194	Special Topics in Physical Geography	Detailed study of specific regions, topics, or current issues in physical geography. Emphasis on relationships within and between the atmosphere, lithosphere, hydrosphere, biosphere, and how humans relate to their environment. Topics may include environmental ecosystems, physical processes (i.e., weather, climate, geomorphology, oceanography), natural resources and the impacts of human population (i.e., pollution, politics, religion, economic activities).	Prerequisites: None.	LEC 3.0 3.0 3.0

GPH210	Society and Environment	Principles of physical geography relating to environmental problems pertinent to contemporary society. Pollution, maladjusted land use, resource exploitation	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
GPH211	Landform Processes	Geographic characteristics of landforms and earth-surface processes emphasizing erosion, transportation, deposition and implications for human management of the environment.	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
GPH212	Introduction to Meteorology I	Atmospheric processes and elements. General and local circulation, heat exchange and atmospheric moisture	Prerequisites: None.	LEC 3.0 3.0 3.0
GPH213	Climate and Weather	Study of atmospheric phenomena over periods of time measured in months, years or longer. Includes average weather conditions, infrequent and unusual types of weather, and the influence of weather on the cultural and human landscape.	Prerequisites: None.	LEC 3.0 3.0 3.0
GPH214	Introduction to Meteorology Laboratory I	Basic meteorological and climatological measurements	Prerequisites: None. Corequisites: GPH212.	LAB 1.0 3.0 3.0
GPH215	Climate and Weather Laboratory	A mathematical, statistical, and spatial analysis of climatological phenomena.	Prerequisites: None. Corequisites: GPH213.	LAB 1.0 3.0 3.0
GPH219	Introduction to GIS Using ArcGIS	An introduction to desktop Geographic Information Systems (GIS) technology using ArcGIS software	Prerequisites: A grade of C or better in CIS105 or CSC180 or permission of Instructor.	L+L 3.0 3.0 3.0
GPH220	Intermediate GIS Using ArcGIS	Further development of knowledge and skills in Geographic Information Systems (GIS), including evolution of GIS, GIS users, statistical applications, spatial databases, spatial analysis and related technology, and overview of spatial data	Prerequisites: A grade of C or better in GPH219 or permission of Instructor.	LEC 3.0 3.0 3.0
GPH225	GIS: Applications in Homeland Security and Emergency Preparedness	Designed to identify and apply spatial data management and analysis techniques to homeland security and emergency preparedness operations and scenarios.	Prerequisites: Permission of Instructor.	LEC 3.0 3.0 3.0

GPH230	Spatial Database I	Design of spatial databases, including data types, fields, tables, and relationships. Covers key fields, attribute domains, spatial data collection methods, software development lifecycle, and Computer Aided Software Engineering (CASE) tools	Prerequisites: A grade of C or better in GPH220 or permission of Instructor.	LEC 3.0 3.0 3.0
GPH267	Extreme Weather and Climate	Emphasis on interaction of physical and cultural geography in potentially hazardous weather and climate processes. Exploration of hazard risk analysis.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
GPH270	Introduction to Cartography and Geospatial Technologies	Overview of maps, map projections and cartography. Introduction to geospatial technologies, including remote sensing, Global Positioning System, Geographic Information System, and statistical analysis	Prerequisites: None.	LEC 3.0 3.0 3.0
GPH273	Advanced GIS Using ArcGIS	Advanced data and spatial analysis techniques in Geographic Information Systems (GIS), using ArcGIS	Prerequisites: A grade of C or better in GPH220 or permission of Instructor.	LEC 3.0 3.0 3.0
GPH275	Introduction to Remote Sensing	Uses and applications of remote sensing and imagery in Geographic Information Systems (GIS). Uses and application of Global Positioning Systems to GIS and Remote Sensing.	Prerequisites: None.	L+L 3.0 3.0 3.0
GPH282AA	Service-Learning Experience in Physical Geography	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
GPH282AB	Service-Learning Experience in Physical Geography	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
GPH282AC	Service-Learning Experience in Physical Geography	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

GPH298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
GPH298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
GPH298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GRK101	Elementary Classical Greek I	Introduction to the basic grammar and vocabulary of Ancient Greek. Includes introductory study of Ancient Greek culture. Practice reading and translating Ancient Greek as well as basic translation of English to Ancient Greek.	Prerequisites: None.	L+L 4.0 4.0 4.0

GRK102	Elementary Classical Greek II	Continued study of the grammar and vocabulary of Ancient Greek and Ancient Greek culture. Emphasis on reading and translating Ancient Greek to English, culminating in the reading of unadapted ancient texts.	Prerequisites: A grade of C or better in GRK101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 4.0 4.0 4.0
GRK296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
GRK296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

GRK296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
GRK296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
GRK298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

GRK298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
GRK298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
GST201	Game Studies	Introduces concepts, tools, and topics necessary to studying and understanding games, whether analog or digital, as closed systems for definition, analysis, design, development, play, critique, and revision. Surveys games from around the world and introduces concepts, tools, and topics necessary to studying and understanding them, whether analog or digital, as closed systems for definition, analysis, design, development, play, critique, and revision.	Prerequisites: A grade of C or better in (RDG100 or RDG100LL) or (RDG100AA and RDG100AB and RDG100AC) or RDG111 or RDG112 or RDG113 or eligibility for ENG101 as indicated by appropriate writing assessment test score.	LEC 3.0 3.0 3.0

GST202	Games, Culture and Aesthetics	Considers games as artifacts and expressions of our basic consciousness, humanity, and potential. Explores through the lens of world cultures such concepts as values, power relations, gender roles, arts, aesthetics, and desire. Compares games across cultural, temporal, geographic, and linguistic divides, for the purpose of examining and appreciating the experiences, contributions, and values of diverse populations, as conveyed through the global phenomenon of games.	Prerequisites: A grade of C or better in (RDG100 or RDG100LL) or (RDG100AA and RDG100AB and RDG100AC) or RDG111 or RDG112 or RDG113 or eligibility for ENG101 as indicated by appropriate writing assessment test score.	LEC 3.0 3.0 3.0
GST245	Games for Teaching and Learning	Survey of past and present games for teaching and learning from multiple cultures and continents. Exploration of the potential for games to help us: face challenges; solve problems; enhance our quality of life; and render our experience of the world in a more meaningful way. Applies theories of learning to determine best practices in game design, development, and production. Demonstrates how to align instructional content with appropriate game-based mechanics and thinking. Culminates in the prototype of a game for teaching and learning.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and (RDG100 or RDG100LL or RDG111 or RDG112 or RDG113) or satisfactory score on District reading placement exam or permission of Instructor.	LEC 3.0 3.0 3.0
GTC104	Manufacturing Processes	Introduces students to manufacturing processes used in conversion of raw materials into useful products. Presents the basic manufacturing processes in logical groups, based on similarities of purpose and applications	Prerequisites: None.	L+L 4.0 7.0 7.0



GTC106	Industrial Safety	Safety, health management, and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) act, materials handling, electrical safety, machine safety, first response to fire and medical emergencies, safety signs and color codes, recognition of safety and health hazards accident prevention, management responsibilities, and OSHA 10 certification.	Prerequisites: None.	LEC 2.0 2.0 2.0
GTC106AA	Industrial Safety	Safety, health management and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) act, materials handling, electrical safety, machine safety, first response to fire and medical emergencies, safety signs and color codes, recognition of safety and health hazards accident prevention, and management's responsibilities	Prerequisites: None.	L+L 2.0 3.0 3.0
GTC107	Technical Mathematics I	Mathematical principles to include basic operations, significant digits, exponents, square roots and order of operations. Solve problems using arithmetic, signed numbers, percentages, fractions, exponents, and square root. Use of hand held calculator. Technology related problems	Prerequisites: None.	LEC 3.0 3.0 3.0
GTC108	Technical Mathematics II	Fundamental algebraic operations. Problem solving involving metric measurement, gears, pulleys, simple mechanism problems. Areas and volume calculations of geometric figures. Essentials of trigonometry for solving right and oblique triangles.	Prerequisites: A grade of C or better in GTC107 or permission of Instructor.	LEC 3.0 3.0 3.0
GTC121	Construction Estimating I	Fundamentals of determining quantities of material, equipment and labor for given project. Includes procedures used in applying proper unit costs to these items	Prerequisites: None.	LEC 3.0 3.0 3.0

GTC123	Construction Estimating II	Details of job estimates. Includes unit cost considerations and subcontracting. Emphasis on bid preparation	Prerequisites: A grade of C or better in GTC121 or permission of Department or Division.	LEC 3.0 3.0 3.0
GTC127	Beginning Woodworking	Introduction to woodworking fundamentals and applications. Familiarization with the basic woodworking tools emphasizing the safe and proper use of woodworking hand tools and stationary and portable power tools. Class projects develop a working project plan, identify material needs, cost analysis, basic construction of the project, and basic finishing techniques	Prerequisites: None.	L+L 3.0 4.0 4.0
GTC128	Intermediate Woodworking	Further development and application of basic woodworking skills. Complex projects with emphasis on planning and calculating and buying needed materials. Introduction of jointery, complex fitting, more advanced finishing, and wood carving.	Prerequisites: A grade of C or better in GTC127 or previous woodworking experience.	L+L 3.0 4.0 4.0
GTC129	Manufacturing Welding	Technical theory, safety considerations, and application of shop and welding processes commonly used in manufacturing, including oxyacetylene welding, brazing, and cutting, SMAW (Elec ARC), GMAW (MIG), GTAW (TIG) and plasma cutting	Prerequisites: None.	L+L 3.0 8.0 8.0
GTC130	Furniture Construction I	Process of building a piece of furniture including calculating and buying needed material, using tools properly and safely (hand tools and machines), jointery, wood preparation and basic finishing techniques.	Prerequisites: A grade of C or better in GTC128 or previous woodworking experience and permission of Instructor.	L+L 3.0 6.0 6.0
GTC131	Furniture Construction II	Continuation of GTC130 including special set-ups on machines, special joints, adhesives, special finishes, panel doors, panel drawers, metal drawer guides and plastic laminates	Prerequisites: A grade of C or better in GTC130 or permission of instructor.	L+L 3.0 6.0 6.0

GTC132	Wood Finishing	Introduction to the materials, processes, and sequences used in applying a variety of finishes to various wood types. Includes abrasives, stains, fillers, surface coats, tools and equipment, and basic refinishing techniques.	Prerequisites: None.	L+L 3.0 4.0 4.0
GTC144	Introduction to Cabinetmaking	Techniques and projects to produce complex cabinet projects. Includes project planning, working from plans, material cost analysis, and advanced finishing techniques.	Prerequisites: A grade of C or better in GTC130 and permission of Instructor.	L+L 3.0 5.0 5.0
GTC145	Advanced Cabinetmaking	Further exploration of advanced woodworking techniques on complex projects.	Prerequisites: A grade of C or better in GTC144 and permission of instructor.	L+L 3.0 5.0 5.0
GTC181	Introduction to Fluid Power	Develops an understanding of the fundamental laws and principles of fluids together with consideration of such fluid devices as valves, cylinders, pumps, sizes of lines, and simple hookups. Includes both hydraulics and pneumatics	Prerequisites: A grade of C or better in ELE101 or equivalent.	L+L 3.0 6.0 6.0
GTC182	Building Construction Methods I	Basics of building construction from job site selection through exterior finish of the shell. Focuses mainly on residential construction for the consumer. Includes blueprints, estimating materials and labor, work scheduling, job layout, foundations, framing, and exterior finish. Energy conservation, safety, and building codes discussed throughout the course	Prerequisites: None.	L+L 3.0 4.0 4.0

GTC185	Electro-Mechanical Devices	Concepts, principles, maintenance, and troubleshooting of mechanical and electro-mechanical devices; mechanical alignment of shafts, pillowblocks, gears, and couplers on mechanical breadboard; transmission devices including lead screws, linkages, worm and worm wheels, gear trains, speed reducers, chain drives, and belt drives; principles of lubrication; operation of dc(direct current), ac(alternating current), and stepping motors; application of tachometers, stepping motors, linear actuators, relays, solenoids, switches, contactors, starters, and fuses; selection and specification of components from manufacturer's catalogs.	Prerequisites: A grade of C or better in ELE101 or GTC108 or (MAT103AA and MAT103AB) or permission of Instructor.	L+L 4.0 6.0 6.0
GTC191	Applied Plumbing Codes	Uniform plumbing code and plumbing systems installation requirements. Code administration as well as requirements relative to the installation and maintenance of plumbing systems.	Prerequisites: None.	LEC 3.0 3.0 3.0
GTC207	High-Vacuum Technology	Basic theory and practice of high-vacuum systems used in microelectronics processing. Includes vacuum pumps, seals, gauges, valves, power supplies, leak-detecting equipment, and related hardware	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
GTC208	Statistical Process Control	Study of statistical process control concepts and methods. Extraction and application of specific parameters from data retrieved from a process	Prerequisites: A grade of C or better in ELE101 or GTC108 or permission of Department or Division.	LEC 3.0 3.0 3.0

GTC209	Automated Manufacturing	Evolution of automation in manufacturing from fixed (hard) automation to Computer Integrated Manufacturing (CIM) is presented with numerical control (NC) ; computer-aided design/computer-aided manufacturing (CAD/CAM); automated material handling; automation communication protocol. Manufacturing management strategies include statistical process control (SPC); material requirements planning (MRP); manufacturing resource planning (MRPII); and just-in-time (JIT). Hands-on experience with programmable logic controllers (PLC) and robotics included	Prerequisites: A grade of C or better in ELT131 or ELE131 or GTC/MET206 or equivalent.	L+L 3.0 6.0 6.0
GTC216	Properties of Materials	Study of manufacturing properties of materials, the behavior of materials under load, stress and strain and torsion and qualities of materials other than strength	Prerequisites: None.	LEC 3.0 3.0 3.0
GTC223	Advanced Machine Tools	Advanced machining practices; emphasis on application of machines and tool theory.	Prerequisites: A grade of C or better in GTC102 or MET231.	L+L 3.0 6.0 6.0
GTC236	CAD/CAM Computer Numerical Control (CNC) Programming	Programming of Computer Numerical Control (CNC) machine tools such as CNC Milling Machines, and Turning Centers. Utilizing Computer Aided Drafting and Computer Aided Manufacturing (CAD/CAM) for design and generation of part geometry. Verification of tool path using CAM graphics. Generate program media using a CAM post processor	Prerequisites: None.	L+L 3.0 6.0 6.0
GTC272	Automated Control Systems (PLC Applications)	The programmable logic controller as the control unit for the application of sensors, switches, and transducers. Motors, stepper motors, and other prime movers are controlled. Includes both on/off and analog devices.	Prerequisites: A grade of C or better in GTC/MIT209 or permission of Instructor.	L+L 3.0 6.0 6.0

GTC273	Industrial Automation Controls and System Integration.	A study in application and implementation of industrial control systems including machine building and system integration	Prerequisites: A grade of C or better in GTC272.	L+L 3.0 6.0 6.0
GTC276	Solids Programming	Parametric modeling, CNC part production, model to CAM system integration, and solid model part representation. Applied CAD/CAM in the role of Computer Integrated Technology (CIM)	Prerequisites: A grade of C or better in GTC266.	L+L 3.0 6.0 6.0
GTC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
GTC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

GTC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
GTC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
GTC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

GTC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
GTC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HBR101	Elementary Biblical Hebrew I	Introduction to the basic alphabet, grammar, pronunciation and vocabulary of classical Hebrew. Listening, speaking, reading, and writing skills	Prerequisites: None.	LEC 4.0 4.0 4.0
HBR102	Elementary Biblical Hebrew II	Continued study of grammar and vocabulary of classical Hebrew with emphasis on oral reading and interpretation skills.	Prerequisites: A grade of C or better in HBR101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
HBR201	Intermediate Biblical Hebrew I	Advanced study of grammar and vocabulary of classical Hebrew with emphasis on oral reading and interpretation skills.	Prerequisites: A grade of C or better in HBR102 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0



HCC109	CPR for Health Care Provider	Current American Heart Association standards for one and two rescuer cardiopulmonary resuscitation (CPR) and obstructed airway procedures on the adult, infant, and pediatric victim. Use of automatic, external defibrillation and resuscitation equipment.	Prerequisites: None.	LEC 0.5 0.5 0.5
HCC109AA	CPR for Healthcare Providers Practice and Testing	Knowledge and skills refreshment for renewal of a current American Heart Association (AHA) Healthcare Provider (HCP) card or completion of eLearning practice and testing. Including one and two rescuer Cardiopulmonary Resuscitation (CPR) and obstructed airway procedures on the adult, infant, and pediatric victim. Automated external defibrillation (AED) application and oxygenation/ventilation management.	Prerequisites: Valid Healthcare Provider CPR card at time of course or Part 1 Completion Certificate from an AHA HCP eLearning online course.	LEC 0.25 0.25 0.25

HCC130	Fundamentals in Health Care Delivery	Overview of current and recent development of health care professions, including career and labor market information, health care delivery systems, third party payers, and facility ownership. Health organization structure, patient rights and quality care. Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Worker rights and responsibilities. Healthful living practices to include nutrition, stress management and exercise. Occupational Safety and Health Administration (OSHA) standard precautions and facility safety. Use of principles of body mechanics in daily living activities. Basic communication skills which facilitate inter-professional teamwork in the health care setting. Focus on development of personal communication skills and an understanding of how effective communication skills promote teamwork. Focus on intercultural communication strategies.	Prerequisites: None.	LEC 3.0 3.0 3.0
HCC130AA	Health Care Today	Overview of current health care professions including career and labor market information. Health care delivery systems, third-party payers, and facility ownership. Health organization structure, patient rights and quality care.	Prerequisites: None.	LEC 0.5 0.5 0.5
HCC130AB	Workplace Behaviors in Health Care	Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Worker rights and responsibilities.	Prerequisites: None.	LEC 0.5 0.5 0.5

HCC130AC	Personal Wellness and Safety	Introduces healthful living practices for health care professionals to include nutrition, stress management and exercise. Includes Occupational Safety and Health Administration (OSHA) standard precautions and facility safety. Use of principles of body mechanics in daily living activities.	Prerequisites: None.	LEC 0.5 0.5 0.5
HCC130AD	Communication and Teamwork in Health Care Organizations	Emphasis on basic communication skills which facilitate teamwork in the health care setting. Focus on development of personal communication skills and an understanding of how effective communication skills promote teamwork. Focus on intercultural communication strategies.	Prerequisites: None.	LEC 0.5 0.5 0.5
HCC130AE	Legal Issues in Health Care	Basic legal terminology used in the health care setting. Legal concepts related to health care employment, medical documentation, and communication. Introduction to regulatory requirements in health care.	Prerequisites: None.	LEC 0.5 0.5 0.5
HCC130AF	Decision Making in the Health Care Setting	Principles and application of a decision making model. Description and application of ethics and process improvement and the relationship of both to the decision making model.	Prerequisites: None.	LEC 0.5 0.5 0.5
HCC145	Medical Terminology for Health Care Professionals	Medical terminology used in health care, with special care populations and in special services. Body systems approach to terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing terms using word parts. Medical abbreviations and symbols and term spelling.	Prerequisites: None.	LEC 3.0 3.0 3.0

HCC145AA	Medical Terminology for Health Care Professionals I	Introduction to medical terms used in health care. Body systems approach to selected terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing selected terms using basic word parts. Selected medical abbreviations and symbols and term spelling.	Prerequisites: None.	LEC 1.0 1.0 1.0
HCC145AB	Medical Terminology for Health Care Professionals II	Selected medical terms used in health care. Body systems approach to more detailed terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing selected terms using standard word parts. Selected abbreviations and symbols and term spelling.	Prerequisites: A grade of C or better in HCC145AA.	LEC 1.0 1.0 1.0
HCC145AC	Medical Terminology for Health Care Professionals III	Medical terminology used with special care populations and in special services. Includes obstetric, pediatric, mental health, diagnostic imaging, oncology, and surgery terms. Use of special care populations and special services word parts and term spelling.	Prerequisites: A grade of C or better in HCC145AA and HCC145AB or HCC146.	LEC 1.0 1.0 1.0
HCC146	Common Medical Terminology for Health Care Professionals	Common medical terms used in health care. Body systems approach to common terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing common terms using word parts. Common medical abbreviations and symbols and term spelling.	Prerequisites: None.	LEC 2.0 2.0 2.0
HCC164	Pharmacology for Allied Health	Chemical, generic, and trade names for drugs. Use of drug references. Pharmacological principles of drugs. Routes of drug administration. Federal and Arizona regulations. Classification of drugs. Abbreviations and symbols for drug measurement, administration, and prescription.	Prerequisites: A grade of C or better in HCC130 or (HCC130AA, HCC130AB, HCC130AC, HCC130AD, HCC130AE and HCC130AF) or work experience or equivalent course education as evaluated by the Health Core Curriculum Coordinator.	LEC 0.5 0.5 0.5

HCC200	Basic Client Care for Allied Health	Safety procedures for the hospitalized client. Transfer, moving and positioning techniques. Client assessment methods and procedures. Protection of airways, drains, tubes, intravenous lines, and infusion pumps. Care of patient in traction and those with limitations to movement. Gloving, gowning, and sterile procedures.	Prerequisites: A grade of C or better in HCC130 or (HCC130AA, HCC130AB, HCC130AC, HCC130AD, HCC130AE and HCC130AF) or equivalent.	LAB 0.5 1.5 1.5
HCC204	Clinical Pathophysiology	Causes of disease and their impact on the human body. Common physiologic effects of disease on body systems. Roles of the multidisciplinary health care team in the diagnosis and treatment of disease. Cultural implications in prevention and treatment of disease.	Prerequisites: A grade of C or better in HCC130 or (HCC130AA, HCC130AB, HCC130AC, HCC130AD, HCC130AE and HCC130AF) or equivalent and (BIO160 or BIO201).	LEC 3.0 3.0 3.0
HCC208	Health Care Leadership	Introduction to concepts and skills required of health care leaders. Discussion of leadership styles and conflict management. Application of motivation, delegation, and communication techniques to teamwork and leadership.	Prerequisites: A grade of C or better in HCC130 or (HCC130AA, HCC130AB, HCC130AC, HCC130AD, HCC130AE and HCC130AF) or equivalent.	LEC 1.0 1.0 1.0
HCC218	Venous Access for Diagnostic Agents and Pharmaceuticals	Scope of practice and regulations governing venipuncture. Anatomy and physiology of the vascular system. Occupational Safety and Health Administration (OSHA) guidelines. Theory and practice of basic venipuncture for diagnostic agents and pharmaceuticals including equipment and procedures.	Prerequisites: HCC130 or (HCC130AA, HCC130AB, HCC130AC, HCC130AD, HCC130AE, and HCC130AF) or work experience or equivalent course education as evaluated by the Health Core Curriculum Coordinator or currently credentialed as a health care provider.	LAB 0.5 1.5 1.5

HCC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HCC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HCC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HCE113	Biomedical Electronics I	Electronic concepts, electrical connections including grounding, and electrical and patient safety	Admission to the Electroneurodiagnostics Program or admission to Polysomnographic Technology Program.	LEC 2.0 2.0 2.0

HCE124	Donor Phlebotomy: Interviewing Techniques	Theory and practice of interviewing techniques in donor setting or health care environment.	Prerequisites: Acceptance into the Donor Phlebotomy program or permission of Program Director.	L+L 2.0 10.0 0.0
HCE125	Practicum: Donor Interviewing Techniques	Application of interviewing techniques in donor setting or health care environment.	Prerequisites: A grade of C or better in (HCE124 and acceptance into the Donor Phlebotomy program) or permission of Program Director.	LAB 1.5 12.0 0.0
HCE126	Donor Phlebotomy: Basic Donor Collection	Theory and practice of basic donor phlebotomy including preparation; operation of equipment; and transportation, packing, and shipping procedures.	Prerequisites: A grade of C or better in (HCE124 and acceptance into the Donor Phlebotomy program) or permission of Program Director.	L+L 1.5 3.0 0.0
HCE127	Practicum: Basic Donor Collection	Application of basic donor phlebotomy to obtain blood from donors in a community blood center setting including preparation, operation of equipment, and shipping and packaging procedures.	Prerequisites: A grade of C or better in (HCE126 and acceptance into the Donor Phlebotomy program) or permission of Program Director.	LAB 1.0 9.5 0.0
HCE271	Patient Care Technician Skills	Designed to prepare students for advanced patient care skills. Fundamentals in microorganisms and microbial control. Specimen collection, handling and testing, wound care, catheterization, and other designated procedures.	Prerequisites: Acceptance into the Patient Care Technician program or permission of Program Director.	L+L 1.0 1.75 1.75
HCE272	Practicum: Patient Care Technician	Designed to provide clinical experience in the medical facility. Emphasis on application of advanced patient-care skills. Includes incorporation of new skills into a work assignment and development of working relationships in an expanded role.	Prerequisites: (HCE109 HCE261 HCE271 current CPR card for Health Care Provider proof of immunity and health declaration form signed by a licensed health care provider proof of negative results to a drug screening and current fingerprinting clearance card) or permission of Program Director.	LAB 1.0 4.75 4.75

HCE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HCE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HCE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0



HCR100	Care of the Medically Complex Child	Course content will cover the orientation materials and fundamental concepts of foster parents caring for a medically complex child. The course will cover the common disorders and disease processes of children while providing basic knowledge to caregivers.	Prerequisites: None.	LEC 1.0 1.0 1.0
HCR210	Clinical Health Care Ethics	An introduction to health care ethics with emphasis on analysis and ethical decision making at both the clinical and health policy levels for health care professionals. Theoretical foundation of bioethics reviewed within historical and contemporary contexts.	Prerequisites: A grade of C or better in ENG102 or ENG108 or permission of Instructor.	LEC 3.0 3.0 3.0
HCR220	Introduction to Nursing and Health Care Systems	Introduction to the social, political, and economic contexts of the nursing profession and health care systems in the United States.	Prerequisites: A grade of C or better in ENG102 or ENG108 or permission of Instructor.	LEC 3.0 3.0 3.0
HCR230	Culture and Health	Relation between cultures of diverse groups and health/illness. Emphasis on cross-cultural communication, including awareness of own cultural influences and indigenous and complementary healing practices	Prerequisites: None.	LEC 3.0 3.0 3.0
HCR240	Human Pathophysiology	Chemical, biological, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered.	Prerequisites: A grade of C or better in BIO202 or BIO205, or permission of Instructor.	LEC 4.0 4.0 4.0
HCR240AA	Human Pathophysiology I	Chemical, biologic, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered.	Prerequisites: A grade of C or better in BIO202 or BIO205 or permission of Instructor. Corequisites: HCR240AB or permission of Instructor.	LEC 2.0 2.0 2.0

HCR240AB	Human Pathophysiology II	Chemical, biologic, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered.	Prerequisites: A grade of C or better in BIO202 or BIO205 or permission of Instructor. Corequisites: HCR240AA or permission of Instructor.	LEC 2.0 2.0 2.0
HCR298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HCR298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HCR298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

HCS100	Fundamentals of Surgical Services	Preparation for the Certified Registered Central Service Technician (CRCST) role. Central Service work flow, job responsibilities, growth and development in the field, anatomy and physiology, microbiology for central service regulations and standards, infection prevention and control, tools for cleaning, decontamination, cleaning and decontamination, disinfection, sterile packaging and storage, processing, sterilization, management of patient care equipment, tracking systems, quality assurance, safety, communication, sterile processing for ambulatory surgery and clinics.	Prerequisites: None. Corequisites: HCS/SGT102 or permission of Program Director.	: LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0
HCS101	Medical Terminology for Surgical Services	Medical Terminology for patient care in surgery related areas. Use of word parts, term spelling, pronunciation and abbreviations related to all surgical specialties.	Prerequisites: None. Corequisites: HCS/SGT100.	LEC 1.0 1.0 1.0
HCS102	Basic Surgical Instrumentation for Surgical Services	History, construction and assembly of surgical instrumentation, categories, instrument set assembly, soft tissue foundation sets, general surgery instrumentation sets.	Prerequisites: None. Corequisites: HCS/SGT100.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
HCS110	Packaging and Sterilization	Instrument identification and care, assembling hospital prepared supplies, safety procedures, asepsis principles, monitoring procedures, sterilizer operations, portable equipment, sterile goods, rotation and storage inventory and distribution systems.	Prerequisites: A grade of C or better in (HCS101 or HCS101AA and HCS101AB) or Corequisites: (HCS101 or HCS101AA and HCS101AB) or permission of Instructor.	LEC 2.0 2.0 2.0 LAB 2.0 6.0 6.0
HCS130	Hospital Central Service Practicum	Supervised student application of central service theory and laboratory skills.	Prerequisites: A grade of C or better in HCS101 or (HCS101AA and HCS101AB) or permission of Instructor. Corequisites: HCS110.	LAB 5.0 30.0 0.0

HCS152	Advanced Surgical Instruments for Surgical Services	Surgical specialty instrumentation care and assembly of instruments to include plastic, gynecologic, urologic, basic bone and joint, head and neck, neurosurgery, cardiovascular and thoracic, microscopic, endoscopes, stapling guns, and robotics procedures.	Prerequisites: A grade of C or better in HCS/SGT102.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
HCS154	Hospital Central Service Practicum	Direct supervision of students applying knowledge of Hospital Central Service to include communication, policy and procedures, aseptic and sterile technique, instrument trays and packs, sterilization equipment and documentation performed in the clinical environment.	Prerequisites: A grade of C or better in HCS/SGT100 or permission of Instructor. Corequisites: HCS/SGT152.	LAB 7.0 36.0 0.0
HCS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
HCS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

HCS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
HCS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
HCS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

HCS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HCS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HEB296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

HEB296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
HEB296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
HEB296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

HEB298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HEB298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HEB298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HEC132	Personal and Family Financial Security	Principles and practices of personal and family financial planning, includes savings, budgeting, credit, buying versus renting, and general principles of consumerism.	Prerequisites: None.	LEC 3.0 3.0 3.0



HEC200	Consumer Economics: Issues and Behaviors	Overview of the United States economic system and how it affects individuals as consumers, producers, and citizens in a global economy. Consumer practices and responsibilities investigated.	Prerequisites: None.	LEC 3.0 3.0 3.0
HEC225	Family Economic Resource Management	Long-term and short-term economic trends in family economics and the impact on individuals and families. Emphasis on historical and global perspectives, management of human/family resources, and how public policy issues are related to the family economic system.	Prerequisites: None.	LEC 3.0 3.0 3.0
HEC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
HEC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

HEC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
HEC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
HEC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

HEC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HEC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HEO101	Introduction to Heavy Equipment Operations	Basic terminology, equipment and usage. Career opportunities. Apprenticeship. Work environment. Operator qualifications and responsibilities. Safety practices. Engine types, components and operation. Record keeping	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO104	Heavy Equipment Maintenance	Heavy equipment operator responsibilities. Manufacturers' preventive maintenance (PM) schedules and procedures. Basic equipment systems and related service and preventive maintenance, troubleshooting and inspections	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO106	Tractors	Tractor equipment, basic tractor safety and operator safety. Preventative maintenance and basic tractor operation. Attachment processes and operation of the power-take off control (PTO)	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0

HEO107	Heavy Equipment Operations: Soils I	Basic soil types, properties, and classifications. Soil sampling and conditions, methods of stabilization and compaction, digging and ripping. Heavy equipment including excavators, bulldozers, cleats, compactors, and rollers	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO109	Heavy Equipment Operations: Soils II	Soil characteristics. Shrinkage and swell factors and the settlement of soils. Soil measurement methods and soil density and compaction requirements. Handling requirements for soil and related materials	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO111	Qualifying Rigger and Signalperson Practices	Rigging and signaling theoretical and practical knowledge for slings, rigging hardware, rigging formulas, weights and weight calculations, basic construction materials, operation of rigging components, industry standards and regulations, signals, qualifications, regulations and hazards.	Prerequisites: Formal application and admission to the program is required through the Maricopa County Risk Management Department or Liberty Crane and Rigging Consultants.	L+L 1.5 1.5 1.5
HEO115	Aerial Lift Truck Operation and Safety	Safety, danger and warning signs, and cautions. Equipment usage and set-up. Specific types of aerial lifts. Personal protective equipment usage. Inspection and maintenance procedures for aerial lifts. Operational procedures. Federal safety regulations: Occupational Safety and Health Association (OSHA) and American National Standards Institute (ANSI). Operator responsibilities	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO117	Forklift Operations	Safe and proper operation of forklift. Parts and function of forklift, principles of operation, and safety precautions. Inspection procedures, proper care, and industry standards. On-hands operation of a forklift	Prerequisites: None.	LEC 1.0 1.0 1.0

HEO120	Heavy Equipment Operations: Hazardous Materials Awareness	Emphasis on detection and identification of dangers associated with the release of hazardous materials or the discovery of illegally dumped hazardous materials by heavy equipment operators. Step-by-step guide to personal protection and initiating an appropriate hazardous materials incident response within heavy equipment environment.	Registered Apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
HEO122	Rigging Safety and Equipment	Rigging safety, equipment and inspection. Includes crane hand signals, common rope knots, types of derricks and cranes and safety procedures for rigging and moving materials and equipment	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
HEO123	Introduction to Blueprints	Basic concepts of blueprints, including terms and symbols, grid line systems and blueprint production techniques. Dimensions and blueprint reading	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
HEO124	Scrapers	Terminology. Parts, attachments, and controls. Scraper uses. Safety. Preventative maintenance. Operations and work activities	Employee of Maricopa County or permission of Instructor.	LEC 2.0 2.0 2.0
HEO125	Heavy Equipment Operations: Rollers	Basic types of rollers and their uses. Operational components, instruments, gauges, controls, and attachments. Safety guidelines and rules. Basic preventive maintenance procedures. Basic maneuvers and work activities of rollers	Employee of Maricopa County or permission of Training Director.	LEC 1.0 1.0 1.0
HEO134	Backhoe Operations	Backhoe components and operation. Includes equipment, attachments and accessories, hydraulics and backhoe controls and functions. Safety procedures and related preventative maintenance and record keeping. Basic maneuvering, production and difficult work situations. Backhoe roading considerations	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0

HEO135	Grades I	Components of roadway development and construction. Grade stakes, control, computations, and profiles. Rise, fall, and level grade calculations. Basic leveling methods and leveling equipment. Slope control and cross slopes	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO137	Grades II	Heavy equipment terminology. Basic grading operations to include clearing and grubbing, rough and finish grading. Plan reading, profile, cross-section, and grading sheets. Conventional and electronic surveying equipment. Drainage and practices for setting grade	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO139	All Terrain Vehicle Operation and Safety	Operation, safety and risk awareness of all terrain vehicles (ATVs). Control functions and speed selection. Turns, stops, swerves, hills, obstacles, trails, and various terrains. Scanning, Identifying, Predicting, Deciding, Executing (SIPDE) procedures. Physical and mental conditioning, alcohol, drugs and fatigue. Traveling, Respecting, Educating, Avoiding, Driving (TREAD) Lightly program. State regulations and laws	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO142	Construction Safety/Loss Prevention	Construction safety and loss prevention from the perspective of the construction superintendent. Includes communication and motivation for safety and loss prevention, project security and traffic control, and scheduling planning to prevent losses. Also includes loss prevention documents and inventories, assigning responsibility for safety and equipment maintenance, handling inclement weather and emergencies, and government regulations and inspections.	Prerequisites: None.	LEC 1.0 1.0 1.0

HEO201	Introduction to Earth Moving	Earth moving fundamentals to include types, set up, and production. Loading, hauling, dumping, and backhauling. Site preparation including soils, site plans, staking out, signing, clearing and grubbing. Layout, slopes and grades, excavation, trenching, and haul roads. Drainage requirements, ground water, and stockpiles	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO202	Crane Operation and Safety Training	Theoretical and practical knowledge and information on the best practices of mobile crane and derrick operation, certification and safety. Topics include crane types, hazards, assembly and dis-assembly, lifting concepts, rigging and wire rope, signaling, operator qualifications, maintenance, repair, and inspection requirements.	Prerequisites: Formal application and admission to the program is required through the Maricopa County Risk Management Department or Liberty Crane and Rigging Consultants.	L+L 6.0 6.0 6.0
HEO204	Bulldozers	Trade terminology and primary uses of the bulldozer. Parts, controls, attachments, safety and preventive maintenance. Operations and basic maneuvering. Types of blades and uses. Earth moving operations. Special attachments.	Prerequisites: Employee of Maricopa County or permission of Program Director.	LEC 2.0 2.0 2.0
HEO206	Front-end Loaders	Types of front-end loaders, uses, and characteristics. Controls and their functions. Safe and efficient operations. Basic preventative maintenance. Operations, maneuvering, and work activities, unstable soil. Special attachments	Employee of Maricopa County or permission of training director.	LEC 2.0 2.0 2.0
HEO207	Heavy Equipment Operations: Soils III	Breakthrough repair. Soil stabilization. Geotextile materials. Soil compaction	Employee of Maricopa County or permission of training director.	LEC 1.0 1.0 1.0
HEO212	Heavy Equipment Operations: Finish Operator	Responsibilities, skills, knowledge of the finish operator. Safety requirements and related activities. Leadership and teamwork. Production standards. Laser leveling equipment	Employee of Maricopa County or permission of Training Director.	LEC 1.0 1.0 1.0

HEO214	Heavy Equipment Operations: Excavators	Types of excavators and use. Excavator equipment, attachments, operations, and preventive maintenance. Work activities and basic safety	Employee of Maricopa County or permission of the training director.	LEC 1.0 1.0 1.0
HEO216	Motor Graders	Terminology. Grader types and uses. Components and controls. Safety. Preventative maintenance. Operations and work activities	Employee of Maricopa County or permission of Instructor.	LEC 2.0 2.0 2.0
HEO222	Heavy Equipment Operations: Finishing and Grading	Procedures for equipment check. Finishing equipment: scrapper, motor grader, articulated motor grader, rigid frame motor grader, telescoping excavator, bulldozer. Roadway specifications and materials. Techniques of finish grading. Tolerances for slopes. Subgrade and base process. Landscape finish	Employee of Maricopa County or permission of Training Director.	LEC 1.0 1.0 1.0
HES100	Healthful Living	Health and wellness and their application to an optimal life style. Explores current topics of interest such as stress management, nutrition, fitness, and environmental health. Evaluates common risk factors associated with modern lifestyles.	Prerequisites: None.	LEC 3.0 3.0 3.0
HES101	Personal Empowerment for Effective Living	Concepts and strategies for setting goals, decision making, communicating more effectively and problem solving to assist in behavior change strategies that lead to a healthier lifestyle. Identifies key health content areas, such as nutrition, physical activity and stress management and provides implementation strategies for all areas, as well as, provides critical analysis of health information for consumers.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
HES105	Finding Health Information Online	Development of skills and competency in accessing, evaluating, and using online medical and health information resources.	Prerequisites: None.	LEC 1.0 1.0 1.0



HES106	Cardiopulmonary Resuscitation (CPR)/Automated External Defibrillator (AED)	Basic overview of Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillator (AED). Covers choking procedures and the importance, guidelines, and techniques for performing CPR and utilizing an AED.	Prerequisites: None.	LEC 0.5 0.5 0.5
HES107	Community First Aid	Basic first aid course for the layperson. Training with the assessments and skills that be performed with minimal equipment in common home or workplace emergencies until emergency medical personnel arrive.	Prerequisites: None.	L+L 0.5 0.5 0.5
HES110	Introduction to Global Health Issues and Disease	Introduction to global health challenges and diseases from throughout the world. Focus is on biological and social aspects of major health issues, infectious disease, nutrition and environmental health. Includes review of groups that are at increased risk of poor health and familiarity with policies and programs designed to reduce health inequalities.	Prerequisites: None.	LEC 3.0 3.0 3.0

HES126	Women's Health Issues	Develops awareness of women's health issues across cultures, lifespan, socioeconomic status, education and addresses global concerns and inequalities. The course introduces women's health issues through the history of the Women's Health Movement and the political climate and economic systems in the United States. Addresses women's health issues regarding sexual health and reproduction and examines many chronic diseases common to women. Explores predisposing and precipitating factors affecting women's health and reviews current treatment of disease. Identifies interpersonal and social issues related to women's health and focuses on the development of behaviors that promote a healthy and productive life.	Prerequisites: None.	LEC 3.0 3.0 3.0
HES154	First Aid/Cardiopulmonary Resuscitation	Cardiopulmonary Resuscitation (CPR) and first aid for the adult, child and infant patients includes Automated External Defibrillator (AED), rescue breathing, obstructed airway, and other first aid procedures. Designed to train citizen responders in skills and procedures required during emergency situation.	Prerequisites: None.	LEC 3.0 3.0 3.0
HES201	Substance Abuse and Behavior	Principles and factual bases of drug use and abuse. Physiological and socio-psychological effects of drug use and law enforcement of drug abuse. Consultants used extensively to enrich course.	Prerequisites: None.	LEC 3.0 3.0 3.0
HES210	Cultural Aspects of Health and Illness	Examines how culture influences health and illness, health care practices, barriers to health care, interactions with health care professionals, and health disparities in the U.S.	Prerequisites: None.	LEC 3.0 3.0 3.0

HES271	Sports Medicine Foundations	Introduction to sports medicine knowledge, techniques, and careers. Exploration of current trends in athletic injury prevention, management and rehabilitation including wound care, taping, wrapping, bracing, splinting and protective equipment.	Prerequisites: None.	LEC 3.0 3.0 3.0
HES272	Clinical Practicum in Athletic Training	Practical application, in a clinical setting and under direct supervision, of methods and techniques of treatment of athletic injuries	Prerequisites: A grade of C or better in HES271.	LAB 1.0 7.5 0.0
HES273	Athletic Training: Advanced Wrapping and Taping Techniques	Expands and enhances practical uses of basic taping and wrapping skills. Hands-on experience in the use of braces, athletic taping, and elastic wraps to care for athletic injuries	Prerequisites: A grade of C or better in HES271 or permission of Instructor.	LEC 2.0 2.0 2.0
HES275	Rehabilitation and Therapeutic Interventions in Sports Medicine	Exploration of current trends in the basic and advanced methodologies used in the rehabilitation of athletic injuries. Incorporates demonstrations of injury-appropriate strength and fitness training and therapeutic exercise techniques.	Prerequisites: A grade of C or better in HES271.	L+L 3.0 4.0 4.0
HES282AA	Service-Learning Experience in Health Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
HES282AB	Service-Learning Experience in Health Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
HES282AC	Service-Learning Experience in Health Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

HES296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
HES296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
HES296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

HES296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
HES298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HES298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

HES298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HFA101	Introduction to Insulation	Insulators' union history, significance and benefits. Successful and efficient labor relations. Insulation in relation to other construction trades. Safe and proper use of hand and power tools. Safe work habits, job site safety and first aid. Advanced first aid. Occupational Safety and Health Administration (OSHA) safety training and regulations	Registered Apprentice status with the Heat Frost and Asbestos Workers Joint Apprenticeship Training Committee (JATC) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
HFA102	Insulation Tools and Equipment: Use and Care	Identify tools and equipment used for installation of mechanical insulation, finishes, and accessories. Proper methods for use and care of various tools and equipment.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
HFA110	Math for Heat and Frost Technology	Fundamentals of the metric system. Fundamental operations with whole numbers, common fractions, decimals, percentages and ratios and proportions. Algebraic expressions, operations, powers and roots. Compute measurements of geometric figures	Registered Apprentice status with the Heat Frost and Asbestos Workers Joint Apprenticeship Training Committee (JATC) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
HFA115	Fundamental Insulation Skills: Piping I	Principles of insulation. Materials and methods of insulation. Insulating straight piping. Application of specific types of insulation. Insulation irregular surfaces. Seal and finish insulated pipe	Registered Apprentice status with the Heat Frost and Asbestos Workers Joint Apprenticeship Training Committee (JATC) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

HFA150	Shop Fabrication: Layout and Pattern-making for Insulators I	Shop fabrication for the heat, frost and asbestos trades related to insulation. Draw, bisect, trisect, divide and construct geometric linear and curvilinear geometric constructions. Layout and design templates and patterns for tees, valves, flanges, and endcaps	Registered Apprentice status with the Heat Frost and Asbestos Workers Joint Apprenticeship Training Committee (JATC) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
HFA204	Scaffolding for Insulators	Occupational Safety and Health Association (OSHA) Scaffolding Standard Subpart L, scaffolding terms, safety, erection, and various types of scaffolding used. Aerial lift operation and safety.	Prerequisites: Registered apprenticeship status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
HFA215	Fundamental Insulation Skills: Piping II	Insulation for piping for cryogenic service. Insulation materials, coverings, finishes, and sealants for underground piping. Measure and cut rigid insulation using hand and table saws. Score block and board. Insulation of vertical and horizontal cylinders, finished heads and finished bodies using wired, bands, pins, stick clips, and washers. Insulate duct work in an air-handling system using fibrous board, duct wrap and flexible sheet	Prerequisites: A grade of C or better in HFA115.	LEC 5.0 5.0 5.0
HFA250	Shop Fabrication: Layout and Pattern-making for Insulators II	Shop fabrication for the heat, frost and asbestos trades related to insulation. Advanced layout patterns for long and short radius elbows, cones, bevels, and tank heads. Specifications for selecting fittings and structures. Numbers and sizes of miters and gores	Prerequisites: A grade of C or better in HFA150.	LEC 5.0 5.0 5.0

HFA260	Blueprints and Firestopping	Contents of a set of plans. Major divisions in a set of drawings and title blocks. Bidding requirements, contract forms and conditions of contract. Architect's scale. Architectural, isometric, structural, plumbing, electrical, mechanical, and ductwork drawings. Symbols and abbreviations. Heating, Ventilating, and Air Conditioning system operations. Calculate materials for insulation. Firestopping systems, materials, and installation	Registered Apprentice status with the Heat Frost and Asbestos Workers Joint Apprenticeship Training Committee (JATC) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
HFA270	Supervision for Foremen	Foreman's role on the job site. Management and leadership using functional, adaptive and technical skills. Effective supervision and communication skills. Maslow's Motivational Theory. Short term motivators. Foreman responsibilities in area of performance and production. Traits and habits of effective leaders Leadership styles and team building. Labor/contractor cooperation	Registered Apprentice status with the Heat Frost and Asbestos Workers Joint Apprenticeship Training Committee (JATC) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
HFA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



HFA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HFA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HIM101	Introduction to Health Information Management	Provides detailed investigation of the history, development, and evolution of the health information management (HIM) profession. Topics include health care delivery systems, HIM career paths, HIM functions, and HIM in acute and alternative care settings.	Prerequisites: Acceptance into the Health Information Technology program and permission of Program Director.	LEC 3.0 4.0 3.7
HIM103	Long Term Care Delivery	Provides a survey of the Long-Term Care (LTC) continuum and the health information management function in long term care. Topics include long term care services provided in acute, ambulatory, and alternative care settings; LTC ethics and policy considerations; financial management; and special LTC populations.	Prerequisites: Acceptance into the Health Information Technology program and permission of Program Director.	LEC 4.0 4.0 4.0

HIM105	Computers in Healthcare and Health Record Systems	Introduction to computer applications in healthcare settings including electronic health records, health record content, structure, and origin of clinical information for various healthcare settings. A basic review of federal, state, and organizational documentation guidelines. Legal and ethical issues applicable to health information documentation and coding practices.	Prerequisites: (Acceptance into either the Medical Coding: Hospital-Based or the Medical Billing and Coding: Physician-Based program) and a grade of C or better in HCC130 or permission of Program Director.	LEC 2.0 2.0 2.0
HIM106	Legal and Ethical Aspects of Health Information Management	Overview of legal and ethical principles in health care and health information management. Topics include federal and state court systems; legal terminology; health care law; privacy, confidentiality, and security; release of information guidelines; ethics, bioethics, and ethical dilemmas.	Prerequisites: Acceptance into the Health Information Technology program and permission of Program Director.	LEC 3.0 3.0 3.0
HIM140	Acute Care Documentation and Standards	A comprehensive review of acute care hospital health records. Study of the origination, development, content, flow, and format of acute care records. Documentation standards and chart analysis guidelines specific to accreditation standards, state licensing, and Medicare certification requirements.	Prerequisites: A grade of C or better in HCC130 or permission of Program Director or Corequisites: HIM101 or permission of Program Director.	L+L 2.0 3.0 3.0
HIM150	Health Care Data	Introduction to data collection methods for health information systems including structure, content, and standards. Study of the datasets and databases used in various health care settings. Overview of the creation and maintenance of health information disease registries and indexes.	Prerequisites: A grade of C or better in [HIM140 and (BPC110 or CIS105)] or permission of Program Director.	L+L 2.0 3.0 3.0
HIM160	Health Data and Content	Introduction to data collection methods for health information systems. Overview of data structure, content, and standards, datasets and databases used in various health care settings, and registries and indexes.	Prerequisites: A grade of C or better in (BPC110 or CIS105) or permission of Program Director.	L+L 2.0 3.0 3.0

HIM180	Introduction to Medical Billing and Reimbursement	Overview of the medical billing profession, the revenue management process, and federal billing guidelines. Topics include Medicare, Medicaid, third party payers, management care models, and national insurance schemes.	Prerequisites: Permission of Program Director.	LEC 2.0 2.0 2.0
HIM181	Medical Claims Processing	Provides in depth analysis of the medical claims process in ambulatory care settings. Topics include electronic data interchange, claims management, confidentiality, data retention, and the claims review and appeals process.	A grade of C or better required in all Prerequisites. Prerequisites: (BPC110 and HIM180) or permission of Program Director. Prerequisites or Corequisites: HIM208 or permission of Program Director.	L+L 3.0 5.0 5.0
HIM182	Human Diseases for Coding in Long Term Care Settings	Overview of diseases commonly treated in long term, home health, and hospice settings. Systems approach to causes, signs, symptoms, manifestations, diagnosis, and treatment of these diseases as required for accurate diagnostic coding.	Prerequisites: A grade of C or better in (BIO160 and HCC146) or permission of Program Director.	LEC 2.0 2.0 2.0
HIM183	Diagnostic Coding in Long Term Care Settings	Introduction to the International Classification of Diseases (ICD) in long term care, home health and hospice settings. Topics include principles for diagnostic coding, standards of ethical coding, and diagnostic coding for reimbursement and coding compliance.	A grade of C or better required in all Prerequisites. Prerequisites: (BIO201 and HCC145) or permission of Program Director. Prerequisites or Corequisites: HIM200 or permission of Program Director.	L+L 4.0 6.0 6.0

HIM200	Human Pathophysiology and Pharmacology for Health Information Management (HIM) Professionals	Surveys common disease states and conditions that impact each of the major body systems and the reproductive process. Explores how the study of diseases, conditions, and treatments are connected to the health information management function. Topics include disease etiology; signs and symptoms of diseases and conditions; prognosis of diseases and conditions; and pharmacological concepts related to drug nomenclatures, sources of drugs, drug actions and dosage, and routes of drug administration.	Prerequisites: A grade of C or better in (HCC145 and BIO201) or permission Program Director.	LEC 3.0 4.0 3.7
HIM201	Health Information Statistics and Research	Compilation and usage of various types of administrative and health care statistics including vital records. Introduction to the health information research process and institutional review board functions. Use of computers for computation and data display.	Prerequisites: A grade of C or better in [(BPC110 or CIS105), HIM140 and MAT112] or permission of Program Director.	L+L 2.0 4.0 4.0
HIM203	Healthcare Statistics and Data Analytics	Emphasizes the role of Health Information Management professionals in calculating, mining, and reporting healthcare statistics for data analytics, research, quality assurance, financial, and other purposes. Topics include health statistics, morbidity, mortality, quality resource management, and research design.	Prerequisites: A grade of C or better in [(HIM140 or HIM160) and MAT112] or permission of Program Director.	L+L 3.0 4.0 4.0
HIM204	Cancer Registry	Requirements for managing a cancer registry, including comparisons of systems and data related to a hospital and central cancer registry and other registry standard-setting organizations. Organization and management of the basic functions of cancer registry operations. Analysis and presentation of cancer data and use in studies.	Prerequisites: A grade of C or better in HCC145 or permission of instructor. Corequisites: (BIO202 and HIM150) or permission of Instructor.	L+L 4.0 6.0 6.0

HIM204AA	Cancer Registry I	Requirements for managing a cancer registry, including comparisons of systems and data related to a hospital and central cancer registry and other registry standard-setting organizations. Organization and management of the basic functions of cancer registry operations.	Prerequisites: A grade of C or better in HCC145 or permission of instructor. Corequisites: (BIO202 and HIM150) or permission of Instructor.	L+L 2.0 3.0 3.0
HIM204AB	Cancer Registry II	Requirements for managing a cancer registry. Organization and management of the basic functions of cancer registry operations. Analysis and presentation of cancer data and use in studies	Prerequisites: A grade of C or better in HIM204AA or permission of Instructor.	L+L 2.0 3.0 3.0
HIM205	Managing Health Information in Long Term Care Settings	Provides an in depth analysis of the health information management function in Long Term Care (LTC) settings. Topics include long term care health record systems; LTC regulatory compliance standards and guidelines; common technologies used in LTC; and statistical and data analytics in LTC.	Prerequisites: A grade of C or better in HIM103. Corequisites: BPC110 or permission of Program Director.	L+L 2.0 4.0 4.0
HIM206	Health Information Management in Alternative Care Settings	Characteristics of non-acute care organizations in the United States. Standards and regulations for health records in those settings according to state, federal, and accrediting agencies. Applicable health record content and health information practices.	Prerequisites: A grade of C or better in HIM140 or permission of Program Director.	L+L 2.0 3.0 3.0
HIM206AA	Health Information Management in Alternative Care Settings: Long Term	Characteristics of long term care organizations, including home health and hospice, in the United States. Standards and regulations for health records in those settings according to state, federal, and accrediting agencies. Applicable health record content and health information practices.	Prerequisites: A grade of C or better in HIM140 or permission of Program Director.	L+L 1.0 1.5 1.5

HIM206AB	Health Information Management in Alternative Care Settings: Non-long Term	Characteristics of non-acute care, non-long term care organizations in the United States. Standards and regulations for health records in those settings according to state, federal, and accrediting agencies. Applicable health record content and health information practices.	Prerequisites: A grade of C or better in HIM206AA or permission of Program Director.	L+L 1.0 1.5 1.5
HIM207	Health Information Organizational Resource Management	Provides an overview of principles and practices essential to the efficient use of human, financial, and physical resources within health information management services. Topics include team building, planning, leading, organizing, directing, and controlling.	Prerequisites: A grade of C or better in (HIM101 and HIM106) or permission of Program Director.	LEC 3.0 3.0 3.0
HIM208	ICD-CM Diagnostic Coding	Introduction to the International Classification of Diseases, Clinical Modification (ICD-CM) coding system. Topics include application of current ICD-CM guidelines and conventions for symptoms, signs, and abnormal clinical and laboratory findings, diseases, conditions, and external causes of morbidity in inpatient and outpatient settings.	A grade of C or better required in all Prerequisites. Prerequisites: BIO202, HCC145, and [(HCC164 and HCC204) or HIM200] or permission of Program Director. Prerequisites or Corequisites: HIM180 or permission of Program Director.	L+L 2.0 4.0 4.0
HIM209	Procedural Coding Systems for Non-Coders	Surveys major procedural coding systems used in acute, ambulatory, and alternative care settings. Structure, content, and guidelines for the current International Classification of Diseases, Procedure Coding System (ICD-PCS), Current Procedural Terminology (CPT), and Healthcare Common Procedure Coding System (HCPCS) classification systems are explored. Topics include purpose and function of procedural coding; coding guidelines and conventions; and coding accuracy, totality, and sequencing.	A grade of C or better required in all Prerequisites. Prerequisites: [(HCC164 and HCC204) or HIM200], and BIO202. Prerequisites or Corequisites: HIM208 or permission of Program Director.	L+L 3.0 6.0 6.0

HIM210	ICD-PCS Coding and ICD Applications	Introduction to the International Classification of Diseases, Procedure Coding System (ICD-PCS) coding system. Topics include application of the current ICD-PCS guidelines and conventions for procedures in inpatient settings and coding technologies.	A grade of C or better required in all Prerequisites. Prerequisites: BIO202 and [(HCC164 and HCC204) or HIM200]. Prerequisites or Corequisites: HIM208 or permission of Program Director.	L+L 2.0 4.0 4.0
HIM211	Advanced Applications of Coding and Reimbursement	Provides foundation for advanced coding application including the use of references, source documents, and technology. Topics include Uniform Hospital Discharge Data Set; diagnostic-related groups; federal regulations for hospital-based settings; coding conventions for home health, long term care, rehabilitation, and other health care settings; and the use of codes for administrative, reimbursement, marketing, and regulatory purposes.	Prerequisites: A grade of C or better in (HIM208 and HIM210) or permission of Program Director.	L+L 4.0 6.0 6.0
HIM212	CPT Coding I	Introduction to Current Procedural Terminology (CPT) from both facility and physician perspectives. General content, coding guidelines, and the role in healthcare reimbursement. Coding of basic medical and surgical services including use of modifiers. Ethical coding and compliance issues.	A grade of C or better required in all Prerequisites. Prerequisites: [HCC145, HCC164, HCC204 and (BIO160 or BIO202)] or permission of Program Director. Prerequisites or Corequisites: HIM180.	L+L 2.0 4.0 4.0
HIM213	CPT and HCPCS Coding	Provides students with the foundation for using the Current Procedural Terminology (CPT) and the Healthcare Common Procedure Coding System (HCPCS) coding systems. Topics include coding guidelines, healthcare reimbursement, coding technologies, ethical coding, and compliance issues.	A grade of C or better required in all Prerequisites. Prerequisites: BIO202, HCC 145, [(HCC164 and HCC204) or HIM200], and HIM208. Prerequisites or Corequisites: HIM180.	L+L 3.0 6.0 6.0

HIM214	CPT Coding II	Introduction to Current Procedural Terminology (CPT) from both facility and physician perspectives. General content, coding guidelines, and the role in healthcare reimbursement. Coding of basic medical and surgical services including use of modifiers. Ethical coding and compliance issues.	Prerequisites: A grade of C or better in (HCC204 and HIM212) or permission of Program Director.	L+L 2.0 4.0 4.0
HIM215	Physician-Based Billing and Coding Seminar	Guidance in the development of physician-based billing and coding compliance programs.	A grade of C or better required in all Prerequisites. Prerequisites: HIM208 or permission of Program Director. Prerequisites or Corequisites: HIM181 and (HIM213 or HIM214) or permission of Program Director. Corequisites: HIM216 or permission of Program Director.	LEC 1.0 1.0 1.0
HIM216	Professional Practice in Physician-Based Billing and Coding	Practical application of billing and coding guidelines, conventions, and regulations under the supervision of a preceptor in an ambulatory care setting.	A grade of C or better required in all Prerequisites. Prerequisites: HIM208, Current CPR at BLS Healthcare Provider Level through the American Heart Association, and permission of Program Director. Prerequisites or Corequisites: [HIM181 and (HIM213 or HIM214)] or permission of Program Director. Corequisites: HIM215 or permission of Program Director.	LAB 1.0 5.0 0.0
HIM217	Health Information Management Seminar I	Emphasis on career development and team building functions related to the Health Information Management (HIM) profession.	Prerequisites: A grade of C or better in (HIM106, HIM150, HIM201, and HIM206), or permission of Program Director. Corequisites: HIM218 or permission of Program Director.	LEC 1 1 1



HIM218	Professional Practice	Practical application of health information management knowledge and skills in the workforce.	Prerequisites: A grade of C or better in (HIM106, HIM150, HIM201, and HIM206), and permission of Program Director. Corequisites: HIM217 or permission of Program Director.	LAB 1 5 0
HIM219	Health Information Management Systems	Overview of the fundamental concepts, terminology, and structure of health information systems with an emphasis on applications used to manage electronic health information. Topics include health informatics; health information systems; electronic claims processing; electronic health records; electronic data interchange; and privacy, security, and confidentiality.	Prerequisites: A grade of C or better in [(HIM150 or HIM160) and (BPC110 or CIS105)] or permission of Program Director.	L+L 3.0 5.0 5.0
HIM220	Health Information Management Seminar II	Prepares students for the health information management workforce. Topics include registered health information technician exam review and preparation, career development, team building, and project management for Health Information Management (HIM) professionals.	Prerequisites: A grade of C or better in (HIM207, HIM217, HIM218, and HIM219) or permission of Program Director. Corequisites: HIM224 or permission of Program Director.	LEC 1.0 1.0 1.0
HIM221	Medical Coding Seminar	Guides students in the development of hospital-based coding compliance programs. Explores career development tools for medical billers and coders.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: (HIM211 and HIM213) or permission of Program Director. Corequisites: HIM222 or permission of Program Director.	LEC 1.0 1.0 1.0
HIM222	Professional Practice in Medical Coding	Practical application of coding guidelines, conventions, and regulations under the supervision of a preceptor in an acute care setting.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: [HIM211 and (HIM213 or HIM214)] and Current CPR at BLS Healthcare Provider Level through the American Heart Association and permission of Program Director. Corequisites: HIM221 or permission of Program Director.	LAB 1.0 5.0 0.0

HIM224	Advanced Professional Practice	Practical application of advanced health information management knowledge in a variety of health-related settings. Focus on supervision and management, interdepartmental policies and procedures, budget and staffing considerations, as well as committee planning and preparation.	Prerequisites: A grade of C or better in (HIM207, HIM217, HIM218 and HIM219) and permission of Program Director. Corequisites: HIM220 or permission of Program Director.	LAB 1.0 5.0 0.0
HIM225	Health Data Analytics	Provides students with integral tools and skills to analyze data commonly used in healthcare provision. Topics include data analysis, organization, and preparation tools; statistical techniques and variables; study design; benchmarking; and quality and performance improvement.	Prerequisites: A grade of C or better in [CIS114DE and (HIM201 or HIM203)] or permission of Program Director.	L+L 3.0 4.0 4.0
HIM230	Quality Management and Performance Improvement	Focus on the history and development of quality assurance in various health care facilities, including quality assessment techniques, utilization management, risk management, credentialing, and medical staff services as related to health information management	Prerequisites: A grade of C or better in (HIM207 and HIM219) or permission of Program Director.	LEC 2.0 2.0 2.0
HIM231	Health Data Management Seminar	Designed for students pursuing skills and knowledge in health data management. Topics include career development, team building, health data systems management and preparation for the professional certification exam.	Prerequisites: A grade of C or better in [CIS114DE and (HIM201 or HIM203)] or permission of Program Director. Corequisites: HIM232 or permission of Program Director.	LEC 1.0 3.0 2.4
HIM232	Health Data Management Professional Practice	Practical application of health data management knowledge and skills under the supervision of a preceptor in an acute, ambulatory, and/or alternative care setting.	Prerequisites: (A grade of C or better in [CIS114DE and (HIM201 or HIM203)] or permission of Program Director) and current CPR at Basic Life Support (BLS) Healthcare Provider Level through the American Heart Association. Corequisites: HIM231 or permission of Program Director.	LAB 1.0 5.0 0.0

HIM233	Revenue Cycle Management Seminar	Prepares students for the workforce in the field of revenue cycle management. Topics include strategies for team building, project collaboration, career development, and preparation and review for professional exam.	Prerequisites: A grade of C or better in (HIM208 and HIM210) or permission of Program Director. Corequisites: HIM234 or permission of Program Director.	LEC 1.0 3.0 2.4
HIM234	Revenue Cycle Data Management Professional Practice	Practical application of revenue cycle management knowledge and skills under the supervision of a preceptor in an acute, ambulatory, and/or alternative care setting.	Prerequisites: A grade of C or better in (HIM208 and HIM210) or permission of Program Director. Corequisites: HIM233 or permission of Program Director.	LAB 1.0 5.0 0.0
HIM295AA	Coding for Health Information Management Professionals	Current coding applications for established coding classification system(s). Includes the coding of diseases and operations/procedures. Use of the classification system(s) for reimbursement.	Certification as a Registered Health Information Administrator (RHIA) or Registered Health Information Technician (RHIT) or current coding credential or equivalent training/experience.	LEC 1.0 1.0 1.0
HIM295AB	Coding for Health Information Management Professionals	Current coding applications for established coding classification system(s). Includes the coding of diseases and operations/procedures. Use of the classification system(s) for reimbursement.	Certification as a Registered Health Information Administrator (RHIA) or Registered Health Information Technician (RHIT) or current coding credential or equivalent training/experience.	LEC 2.0 2.0 2.0
HIM295AC	Coding for Health Information Management Professionals	Current coding applications for established coding classification system(s). Includes the coding of diseases and operations/procedures. Use of the classification system(s) for reimbursement.	Certification as a Registered Health Information Administrator (RHIA) or Registered Health Information Technician (RHIT) or current coding credential or equivalent training/experience.	LEC 3.0 3.0 3.0

HIM298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HIM298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HIM298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HIR110	Fundamentals of Kitchen Design	Fundamentals of kitchen planning and design. Cabinet construction and types and styles of cabinets, countertops, fixtures, and appliances. Coding systems, industry standards, kitchen planning guidelines, basic kitchen designs and product ordering	Home Improvement Retail Operations program Admission.	LEC 3.0 3.0 3.0

HIR111	Kitchen Design: Countertops	Countertop materials, features, styles and configurations. Selection guidelines and considerations, installation methods. Drawing layouts, price worksheets, and order forms	Home Improvement Retail Operations program Admission.	LEC 1.0 1.0 1.0
HIR182	Product Knowledge: Kitchen and Bath	Basics of cabinet refacing and replacement. Cabinet types, components, door styles and nomenclature. Types and features of countertops, appliances, sinks, lavatories, tubs, showers, and toilets	Home Improvement Retail Operations program Admission.	LEC 1.0 1.0 1.0
HIR210	Advanced Kitchen Design	Application of kitchen design and planning guidelines. Mechanical symbols, blueprint interpretation, measurement and drawing of kitchen plans. Universal kitchen plans, use of measurement and order forms	Prerequisites: A grade of C or better in HIR110 or permission of Instructor.	LEC 3.0 3.0 3.0
HIR282AA	Volunteerism for Home Improvement Retail: A Service Learning Experience	Service learning field experience within private/public agencies and citizen volunteer groups. Development of educational plan, analysis and critique of service learning experience	Prerequisites: A grade of C or better in HIR210 or permission of Instructor.	LAB 1.0 1.0 1.0
HIS100	History of Western Civilization to Middle Ages	Survey of the origin and development of Western civilization and its institutions from prehistory through the Ancient World and the Middle Ages	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS101	History of Western Civilization Middle Ages to 1789	Survey of origin and development of Western civilization and its institutions from the Renaissance and Reformation through Age of Enlightenment	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS102	History of Western Civilization 1789 to Present	Survey of origin and development of Western civilization and its institutions from French Revolution through the present	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS103	United States History to 1865	The political, economic, and social development of the United States from the Pre-Columbian period through the end of the Civil War (1865).	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS104	United States History 1865 to Present	The political, economic, and social development of United States from 1865 to the present time.	Prerequisites: None.	LEC 3.0 3.0 3.0

HIS105	Arizona History	The prehistoric and contemporary Native American experience, Spanish colonial times, the Mexican National period, the U.S. federal territorial years, and Arizona's political and economic development during the twentieth century.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS106	Southwest History	Survey of Hispanic, Anglo, African-American and Native cultures of the peoples who have settled the American Southwest. Emphasis on cattle, mining, fur trade and transportation industries and role development of the region	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS107	Selected Issues in United States History	Survey of selected major issues in history of United States from early times to present	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS108	United States History 1945 to the Present	Survey of American history from 1945 to the present. Focuses on the political, social, economic and cultural history of the United States from the end of World War II to the present time. Includes domestic developments and foreign policy	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS109	Mexican-American History and Culture	Examination of origins and development of Spanish-American and Mexican- American peoples and their contribution to culture, history and development of United States. Emphasis on Mexican-American War and its impact on educational, social, and economic conditions of the Mexican-Americans of the southwest	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS110	World History to 1500	Survey of the economic, social, cultural, and political elements of world history from the beginning of human civilization to 1500.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS111	World History 1500 to the Present	Survey of the economic, social, cultural, and political elements of world history from 1500 to the present	Prerequisites: None.	LEC 3.0 3.0 3.0

HIS113	History of Eastern Civilizations to 1850	An examination of the characteristics and development of civilizations, religions and philosophies of the Middle East, India, Far East, and Southeast Asia. From ancient times to the mid-nineteenth century	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS114	History of Eastern Civilizations 1850 to Present	Examination of characteristics and development of civilizations of Middle East, India, Far East, and Southeast Asia, from mid-nineteenth century to present	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS140	American Indian History	Survey of American Indian history with emphasis on the last 200 years including developments in the 20th century. Focuses on selected groups such as the Cherokee, Iroquois Confederation, Navajo, Sioux and Indians of the Southwest in relation to cultural, economic, political and social continuity and changes. Topics include development and influence of federal policies, past and present issues confronting Native Americans and how Native American individuals and communities maintain their identities as they confront social changes	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS145	History of Mexico	Survey of the political, economic, and social forces which have shaped the development of Mexico from pre-Columbian times to the present	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS170	American Indian History of the Southwest	Covers history of Indian peoples in the southwestern United States from pre-Columbian era to the present. Includes historical events, the development and implementation of Spanish-Mexican and United States' policies and their impact on Indian peoples in these areas, and current issues of importance to Indian peoples	Prerequisites: None.	LEC 3.0 3.0 3.0

HIS173	United States Military History	Focuses on the impact of the United States military in both peace and war on American society, politics and foreign relations from the colonial period to the present	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS175	Global History of World War II	Global survey of World War II (WWII), focusing on its origins, major military confrontations and events, conclusion, and historical significance.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS190	Environmental History	Survey of the environmental history of the world from hunter-gatherer societies to the present including but not limited to social groups, natural resources, and physical environments and impacts on the Earth.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS201	History of Women in America	Introduction to women's history from the colonial period to the present. Deals chronologically with changes and developments which have influenced the lives of women	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS203	African-American History to 1865	History and cultural heritage of African-Americans from their beginnings in Ancient Africa through the experience of chattel slavery in the Americas to their eventual emancipation and participation in the American Civil War.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS204	African-American History 1865 to Present	Multifaceted experiences of African-American people from the post-Civil War period (1865) to the present, including the collective struggle for freedom, equality, and self-determination in the United States.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS209	The Chicano in Twentieth Century America	Analysis of the twentieth century Chicano experience. Historical perspective of the emergence of Chicanos as an influential minority in the United States	Prerequisites: None.	LEC 3.0 3.0 3.0



HIS212	History of Religion	Survey of the historical contexts in which the major religions have emerged and evolved. Focuses on social and political events throughout history and their impact on religious beliefs and practices.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS240	History of Islamic Civilization from the 6th Century to 1800	Overview of the historical, economic, political, and cultural conditions that brought about the various transformations within the Arab/Islamic world; examination of the impact and interaction of the Islamic civilization with other peoples	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS241	Latin American Civilization in the Colonial Period	A survey of the political, economic, and social forces which molded Latin American civilization in the Colonial Period	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS242	Latin American Civilization in the Post-Colonial Period	A survey of the political, economic, and social forces which molded Latin American civilization in the period of the development of Republics	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS251	History of England to 1700	History of England to 1660. Analysis of the major political, cultural, social, and intellectual, and social factors in English historical development from its earliest times till 1660.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS252	History of England 1700 to Present	Analysis of the major political, cultural, social, and intellectual factors in English historical development from 1650 to present.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS253	History of Ireland to 1603	Survey of the history of the island of Ireland from its prehistoric beginnings to 1603	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS254	History of Ireland 1603 to the Present	Survey of the history of the island of Ireland, including the contemporary Republic of Ireland and Northern Ireland, from 1603 to the present	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS273	US Experience in Vietnam 1945 - 1975	Survey of the US experience in Vietnam, 1945-1975, in view of political, economic, and social forces of the Cold War	Prerequisites: None.	LEC 3.0 3.0 3.0

HIS275	Russia: Kievan Rus to the New Cold War	Survey of the principal political, military, economic, social and cultural development in Russia from Ivan the Great to the present, including a focus on the period when Russia was part of the Soviet Union, 1917-1991.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS277	The Modern Middle East	Survey of the political, religious and economic development of the Middle East since 1500. Emphasis on the decline of the Moslem empire(s), the resurgence of contemporary Pan- Arabism, the Palestinian-Israeli question, jihadism, fundamentalist terrorism, the Taliban and Al Qaeda, and the impact of oil production on the region and the rest of the world.	Prerequisites: None.	LEC 3.0 3.0 3.0
HIS279	Creating and Telling Fact-Based Historical Stories	Creating and telling fact-based stories and stories from history.	Prerequisites: A grade of C or better in EDU/HUM/STO292.	LEC 3.0 3.0 3.0
HIS282AA	Service-Learning Experience in History	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
HIS282AB	Service-Learning Experience in History	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
HIS282AC	Service-Learning Experience in History	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
HIS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

HIS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
HIS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
HIS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

HIS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HIS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HIS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

HLC130	Fundamentals in Health Care Delivery	Overview of current and recent development of health care professions, including career and labor market information, health care delivery systems, third party payers, and facility ownership. Health organization structure, patient rights and quality care. Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Worker rights and responsibilities. Healthful living practices to include nutrition, stress management and exercise. Occupational Safety and Health Administration (OSHA) standard precautions and facility safety. Use of principles of body mechanics in daily living activities. Basic communication skills which facilitate inter-professional teamwork in the health care setting. Focus on development of personal communication skills and an understanding of how effective communication skills promote teamwork. Focus on intercultural communication strategies.	Prerequisites: A grade of C or better is required in HLC145.	30
HLC145	Medical Terminology for Health Care Professionals	Medical terminology used in health care, with special care populations and in special services. Body systems approach to terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing terms using word parts. Medical abbreviations, symbols, and term spelling.	Prerequisites: Admission to program.	99
HLR286	Women and Health: Body/Mind/Spirit/Connection	Economic, sociopolitical, and demographic factors affecting women's health. Methods for optimizing physical, emotional, and spiritual health. Specific health concerns of women throughout the lifespan. Activism for health promotion	Prerequisites: None.	LEC 3.0 3.0 3.0

HLR298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HLR298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HLR298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HMC100	Medical Billing and Coding Examination Review	This course reviews separate subjects that will be taught in preparation for the National Certified Professional Coder (CPC) Examination administered through the American Academy of Professional Coders (AAPC).	Prerequisites: A grade of C or better is required in HMC213 or permission of Instructor.	45

HMC105	Computers in Healthcare and Health Record Systems	Introduction to computer applications in healthcare settings including electronic health records, health record content, structure, and origin of clinical information for various healthcare settings. A basic review of federal, state, and organizational documentation guidelines. Legal and ethical issues applicable to health information documentation and coding practices.	Prerequisites: A grade of C or better is required in HMC181 and HMC213.	20
HMC180	Introduction to Medical Billing and Reimbursement	This course provides an overview of the medical billing profession and the revenue management process. Topics include Medicare, Medicaid, third-party payers, managed care models, and national insurance schemes.	Prerequisites: A grade of C or better is required in HMC200.	50
HMC181	Medical Claims Processing	This course provides an in-depth analysis of the medical claims process in ambulatory care settings. Topics include electronic data interchange, claims management, confidentiality, data retention, and the claims review and appeals process.	Prerequisites: A grade of C or better is required in HMC180.	55
HMC200	Human Pathophysiology and Pharmacology for HMC	This course surveys common disease states and conditions that impact each of the major body systems and the reproductive process. Topics include disease etiology; signs and symptoms of diseases and conditions; prognosis of diseases and conditions; and pharmacological concepts related to drug nomenclatures, sources of drugs, drug actions and dosage, and routes of drug administration.	Prerequisites: A grade of C or better is required in HLC130.	180

HMC208	ICD-CM Diagnostic Coding	This course introduces students to the International Classification of Diseases, Clinical Modification (ICD-CM) coding system. Topics include application of current ICD-CM guidelines and conventions for symptoms, signs, and abnormal clinical and laboratory findings, diseases, conditions, and external causes of morbidity in inpatient and outpatient settings.	Prerequisites: A grade of C or better is required in ISP110PC.	90
HMC213	CPT and HCPCS Coding	This course provides students with the foundation for using the Current Procedural Terminology (CPT) and the Healthcare Common Procedure Coding System (HCPCS) coding systems. Topics include coding guidelines, healthcare reimbursement, coding technologies, ethical coding, and compliance issues.	Prerequisites: A grade of C or better is required in HMC208.	206
HMT101	Introduction to Occupational Safety, Health, and Environmental Technology	Overview of occupational safety, health, and environmental regulations and technology. Overview of the regulatory framework related to safety and environmental program management. Career opportunities and their relationship to business management.	Prerequisites: None.	LEC 3.0 3.0 3.0
HMT102	Hazardous Waste Operations and Emergency Response	Satisfies requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER) certification	Prerequisites: A grade of C or better in HMT101 OSH101 or permission of Instructor.	L+L 4.0 6.0 6.0
HMT102AC	24 Hour Industrial Spill Response	Provides training for industrial haz-mat, spill response and emergency response personnel as outlined in the OSHA regulation 29 CFR 1910.120. Worker protection, procedures, health effects of hazardous materials, personal protective equipment, containment and control, as well as decontamination procedures with emphasis on practical industrial-sized spill response applications through hands-on drills in full protective equipment.	Prerequisites: HAZWOPER certification or permission of Instructor.	L+L 1.5 1.5 1.5



HMT102AD	40 Hour HAZWOPER Appendix E-Final Rule	Hands-on, simulation covering regulations, medical surveillance, hazard recognition, toxicology, site control, safe work practices, monitoring, personal protective equipment, decontamination, and site safety and health as required by OSHA regulations under 29 CFR 1910.120. Site simulations conducted on an outdoor waste site mock-up meeting the requirements of Appendix E-Final Rule	HAZWOPER certification or permission of Instructor.	L+L 3.0 3.0 3.0
HMT103	Hazardous Waste Generation, Reduction, and Treatment	Industrial processes and generation of waste streams. Applicable regulations, home waste generation, reduction.	Prerequisites: A grade of C or better in HMT/OSH101 or permission of Instructor. Corequisites: CHM130.	LEC 3.0 3.0 3.0
HMT104	Health Effects of Environmental Hazardous Materials	Acute and chronic health effects of exposure to chemical, physical, and biological agents	Prerequisites: A grade of C or better in BIO160 or permission of Instructor.	LEC 3.0 3.0 3.0
HMT105	Hazardous Waste Management Applications	Regulation, generator compliance, self inspections, site investigation and remediation, permitting, enforcement, and liability	Prerequisites: A grade of C or better in HMT101 OSH101 and (CHM230 or permission of Instructor).	L+L 4.0 6.0 6.0
HMT106	Hazardous Materials Management Applications	Requirements and application of laws and regulations relating to hazardous materials. Compliance with various governmental agencies.	Prerequisites: A grade of C or better in HMT/OSH101 HMT104 and (CHM230 or permission of Instructor).	L+L 4.0 6.0 6.0
HON190	The Honors Experience	Interdisciplinary studies of selected issues confronting the individual and society and overall human experience. Critical inquiry of specific themes from a wide variety of academic viewpoints. Comprehensive and interdisciplinary review of global, historical, and cultural trends, supplemented by readings and discussion. Varied content due to changing honors forum themes and issues.	Prerequisites: Admission to the college honors program or permission of Instructor.	LEC 3 3 3
HON201	Leadership Development: Historical and Contemporary Perspectives	Interdisciplinary study of leadership focusing on development of leadership skills.	Prerequisites: Admission to the college honors program or permission of Instructor.	LEC 3.0 3.0 3.0

HRC101	Overview of Healthcare Compliance	Introduction and overview of healthcare compliance; evolution of the field as a profession. Exploration of federally legislated mandates for a Compliance Program. Program elements. Organizational steps for implementation in specific settings.	Prerequisites: None.	LEC 1.0 1.0 1.0
HRC228	Healthcare Industry Regulation	Comprehensive review and study of laws that regulate the healthcare delivery industry including fraud and abuse, patient privacy, Protected Health Information (PHI) and electronic Protected Health Information (ePHI), and occupational safety for workforce members, patients, and visitors.	Prerequisites: A grade of C or better in HRC101.	LEC 3.0 3.0 3.0
HRC230	Healthcare Corporate Compliance Program Design	Creation, management, and evaluation of all aspects of a formal health care corporate compliance program. Compliance officers, compliance committee. Risk analysis, recommendations for corrective action. Implementation of corrective action.	Prerequisites: A grade of C or better in HRC101.	LEC 3.0 3.0 3.0
HRC232	Health Care Regulatory Compliance Program Design	Creation, management and evaluation of a health care regulatory compliance program including the work plan. Address the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Breach Rules, HIPAA Security and Meaningful Use Attestation, Occupational Safety and Health Plan for workforce members, patients, and visitors. Occupational Safety and Health Administration (OSHA), Arizona Division of Occupational Safety and Health (ADOSH), Medicare/Medicaid Fraud and Abuse, Human Resources employment laws, Clinical Laboratory Improvement Act (CLIA) and Arizona Radiation Regulatory Agency (ARRA).	Prerequisites: A grade of C or better in HRC101.	LEC 3.0 3.0 3.0

HRC234	Health Care Regulatory Enforcement Case Studies	Comprehensive review of case studies involving litigation and enforcement of health care law including review of landmark and contemporary cases brought by the United States Office of the Inspector General (Fraud and Abuse); the Office of Civil Rights; the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Security Laws. Application of knowledge and skills from earlier coursework to real-world situations.	Prerequisites: A grade of C or better in HRC101.	LEC 3.0 3.0 3.0
HRM102	Menu Planning Development	Principles and techniques of menu planning for food service operations where food is served in quantity; includes applications for health care institutions, commercial kitchens, school cafeterias, and industrial facilities.	Prerequisites: None.	LEC 2.0 2.0 2.0
HRM110	Introduction to Hospitality and Tourism Management	A fundamental overview of the hotel, restaurant, and tourism segments of the hospitality and tourism industry. Provides an overview of the operational sectors of the industry and reviews management components and skills. Contains components to develop communication skills and a professional career plan	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM120	Hotel Facility Management	Fundamental duties and responsibilities of hotel facility management. Emphasis on detail tasks, including personnel, cleaning, purchasing, equipment, textiles, maintenance, and safety. Examines basic systems for hotel facility management record keeping	Prerequisites: None.	LEC 3.0 3.0 3.0

HRM126	Food Service Cost Systems	Basic skills necessary to understand and utilize cost controls. Overview of systems for purchasing, storage, production control, and budgeting. Mechanical and mathematical details emphasized. Accounting process taught with aid of microcomputer. Introduction to standardized accounting software.	Prerequisites: None.	L+L 2.0 2.0 2.0
HRM130	Guest Services Management	Examines organization and management of the hotel front office and guest service operations. Explores key front office functions and related systems and skills necessary to ensure guest satisfaction and efficient operations	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM140	Food Production Concepts	Concepts related to preparation of hot foods, pantry, and bakery items for commercial kitchens. Emphasis on essential components and techniques of food production, food cost control, setting standards, ordering, and inventory	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM142	Wine: From Vine to Table	An overview of the history, culture, viticulture techniques, production, distribution, control, and consumption in the wine industry. Provides an overview of wine and health issues, interpreting wine labels, alcohol service laws, and general operational concepts of the wine industry.	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM144	Gourmet Foods	The art and appreciation of gourmet foods, accompanied by preparation and appropriate services.	Prerequisites: None.	L+L 3.0 4.0 4.0

HRM145	Events Management	Introduction to organizing special events from concept through completion, including planning, coordination, marketing, financing and risk management. Overview of the critical stages and functions involved in staging and managing special events including meetings, conferences, entertainment, expositions, conventions and sporting events	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM146	International Meetings, Conventions and Exhibitions	Introduces the planning and executing of multinational and multicultural meetings, conventions and exhibitions. Emphasizes coordination, logistics, venue selection, budgeting and cultural competencies critical to a global business environment	Prerequisites: A grade of C or better in HRM110.	LEC 3.0 3.0 3.0
HRM150	Hospitality and Tourism Information Systems I	Overview of current computer technology, concepts and terminology as it applies to the hospitality and tourism industry. Use of software applications including word processing, spreadsheet, database and presentation graphics. Discussion of social and ethical issues related to computers. Exploration of relevant and emerging technologies in the industry	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM160	Tourism Principles and Practices	Introduces the fundamental principles and practices of tourism. Examines tourism sectors, consumer behavior, and factors that influence tourism. Focuses on the interaction of tourism with the economy, environment and people	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM220	Hospitality Managerial Accounting	Study of financial statement analysis, asset management, ratio analysis, analytical techniques, and investment decision making. Emphasis on planning, budgeting, and management decisions.	Prerequisites: A grade of C or better in ACC111 or ACC211 or HRM265.	LEC 3.0 3.0 3.0

HRM230	Beverage Management	Identification, production, purchasing, and service of spirits, wine and beer products. Marketing, menu development, and cost controls of a beverage operation. Special emphasis on staffing training, and legal regulations for beverage sales	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM235	Club Management	Examines organization and management of private clubs. Emphasis on member services and operations management. Explores key functions including food and beverage, golf operations, fitness and recreation programs	Prerequisites: A grade of C or better in HRM110.	LEC 3.0 3.0 3.0
HRM240	Commercial Food Production	Application of food preparation principles, procedures, and techniques to small and large quantity food production. Emphasis on techniques and procedures used in contemporary commercial kitchens	Prerequisites: A grade of C or better in HRM110 and HRM140.	L+L 3.0 4.0 4.0
HRM244	Quality Sanitation Management	Systems approach to answering public health concerns, reducing sanitation risks, and ensuring satisfaction for guests, staff members, and owners. Definition and implementation of sanitation quality, cost control, and risk reduction in a hospitality operation	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM250	Hospitality and Tourism Information Systems II	Use of computer systems to generate information needed for management of lodging, tourism and food service businesses. Emphasis on computer-based hotel property and restaurant management systems. Includes basic ledger principles	Prerequisites: A grade of C or better in (HRM110 and HRM150) or permission of Instructor.	LEC 3.0 3.0 3.0
HRM260	Hospitality Human Resource Management	Examines concepts and applications of human resource management in the hospitality industry. Topics include recruitment, selection, training and evaluation. Emphasis on current management methods and productivity in the service environment	Prerequisites: A grade of C or better in HRM110 or permission of Instructor.	LEC 3.0 3.0 3.0

HRM265	Financial Management for Hospitality and Tourism	Examines financial management concepts, analytical techniques and decision making processes essential to hospitality and tourism management. Provides an applied management approach to managing profitability, financing growth, and using financial analysis to make decisions.	Prerequisites: A grade of C or better in HRM110. MAT140 or MAT141 or MAT142 recommended but not required.	LEC 3.0 3.0 3.0
HRM270	Hospitality Marketing	Essential skills of defining a service market, developing a market plan, and directing personnel to follow market plan. Emphasis on marketing in the hospitality industry and understanding segmentation, positioning and promotion in that market	Prerequisites: A grade of C or better in HRM110.	LEC 3.0 3.0 3.0
HRM275	Restaurant Management	Overview of restaurant industry with focus on the major segments. Emphasis on developing plans for: marketing, accounting system, staffing, training, menu development and cost controls for restaurant operation. Special emphasis on safety and sanitation, and legal regulations in the restaurant industry	Prerequisites: None.	LEC 3.0 3.0 3.0
HRM280	Hospitality and Tourism Law	Examines legal aspects of hotel, restaurant and tourism management. Uses case study approach to develop understanding of the laws and regulations governing guest relationships, contracts, employee relations, civil rights, alcoholic beverages, safety and product liability	Prerequisites: A grade of C or better in HRM110.	LEC 3.0 3.0 3.0
HRM285	Gaming Management	History, development, and management of casinos and gaming. Emphasis on environment, operations, regulation, accounting, auditing, and taxation of casinos and gaming operations	Prerequisites: None.	LEC 3.0 3.0 3.0

HRM290	Ecotourism	Overview of ecotourism planning and development with emphasis on contemporary issues associated with environmentally sound, culturally sensitive and economically viable tourism development. Examines the history and emergence of ecotourism and the establishment of policies and management practices associated with sustainable development that conserves natural resources while providing economic benefits	Prerequisites: A grade of C or better in HRM110.	LEC 3.0 3.0 3.0
HRM291	Directed Field Study -International	Directed international field study in hospitality or tourism at an approved site working with industry, government or the nonprofit sector. Designed to provide students the opportunity to integrate theories, principles, and practices from their program of study through practical application in an international setting. Includes a minimum of 240 documented hours of contact with the employer/subject of study at minimum.	Prerequisites: Completion of 15 credits in the Hospitality and Tourism Program a 3.0 or higher grade point average and permission of the program director.	LAB 3.0 15.0 0.0
HRM292	Directed Field Study	Directed field study in hospitality or tourism at an approved site working with industry, government or the nonprofit sector. Designed to provide students the opportunity to integrate theories, principles, and practices from their program of study through practical application. Includes a minimum of 240 documented hours of contact with the employer/subject of study.	Prerequisites: Completion of 15 credits in the Hospitality and Tourism Program a 3.0 or higher grade point average and permission of the program director.	LAB 3.0 15.0 0.0
HRM295AA	Hospitality Internship	Hospitality and/or tourism work experience in a business or industry. Eighty hours of designated work per credit.	Prerequisites: Permission of Department or Division.	LAB 1.0 1.0 0.0
HRM295AB	Hospitality Internship	Hospitality and/or tourism work experience in a business or industry. Eighty hours of designated work per credit for a total of 160 hours.	Prerequisites: Permission of Department or Division.	LAB 2.0 2.0 0.0



HRM295AC	Hospitality Internship	Hospitality and/or tourism work experience in a business or industry. Eighty hours of designated work per credit for a total of 240 hours.	Prerequisites: Permission of Department or Division.	LAB 3.0 3.0 0.0
HRM296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
HRM296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

HRM296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
HRM296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
HRM298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

HRM298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HRM298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HSA101	Medical Assistance Customer Service	An examination of Federal, State and county government agencies and the Arizona Health Care Cost Containment System (AHCCCS). Basic application and verifications processes introduced	Prerequisites: None.	LEC 1.0 1.0 1.0
HSA105	Recognizing Domestic Violence	Overview of recognizing domestic violence and resources for the victim. Covers types of violence, behaviors and characteristics of an abuser, effects on children as well as the Domestic Violence Statute and Orders of Protection	Prerequisites: None.	LEC 0.5 0.5 0.5
HSA113	Family Assistance Administration (FAA) Introduction	Overview of the Department of Economic Security and Family Assistance Administration (DES FAA). Covers Federal and State policy and regulation. Emphasis in eligibility processing procedures and system management.	Prerequisites: None.	LEC 2.0 2.0 2.0

HSA115	Family Assistance Administration Office Support I	Family Assistance Administration (FAA) office support procedures. Covers programs, confidentiality, and use of the Arizona Technical Eligibility Computer System (AZTECS). Also includes scheduling, screening, and documentation policies and procedures	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
HSA116	Nutrition Assistance Determination	Overview of Federal and State policies and procedures for determining eligibility. Includes Nutrition Assistance payments eligibility determination, expedited services, presumptive eligibility, recertification applications, and eligibility reviews.	Prerequisites: A grade of C or better in HSA113.	LEC 3.0 3.0 3.0
HSA117	Family Assistance Administration Office Support II	Family Assistance Administration office support registration procedures. Includes conditions for special registration, error correction, and list building. Also covers processing timeframes, rescheduling, and dealing with social engineering.	Prerequisites: A grade of C or better in HSA115 or Corequisites: HSA115.	L+L 2.0 3.0 3.0
HSA118	Medical Assistance Determination	Overview of the Arizona Health Care Cost Containment System (AHCCCS) and the health services and programs provided. Covers Federal and State policies and procedures for determining medical eligibility. Includes medical assistance eligibility process and application procedures, non-financial and financial eligibility factors, services for nonqualified non-citizens, duration of coverage, and renewal process.	Prerequisites: A grade of C or better in HSA113.	LEC 3.0 3.0 3.0
HSA119	Unemployment Insurance Customer Service I	Basic customer service training for unemployment insurance claim representatives. Knowledge on computerized and phone systems. Includes claim taking steps and phone service skills	Prerequisites: None.	L+L 3.0 4.0 4.0

HSA121	Unemployment Insurance Customer Service II	Inquiry call training for unemployment insurance claim representatives. Covers last employer definition, wage issues, and reinstatement	Prerequisites: A grade of C or better in HSA119.	LEC 2.0 2.0 2.0
HSA122	Unemployment Insurance Claims Taking	Procedures for making claimant eligibility determinations and employer chargeability. Also includes interviewing techniques, required documentation and processes for generating determinations	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
HSA124	Unemployment Insurance Adjudication I	Further examination of chargeability issues. Types of evidence, rules governing credibility of evidence and further development of factfinding skills. Special emphasis on separation issues, rules and determinations	Prerequisites: A grade of C or better in HSA122.	LEC 2.0 2.0 2.0
HSA126	Unemployment Insurance Adjudication II	Examination of advanced eligibility issues. Special types of adjudications including administrative penalties, retirement/pension and educational wages	Prerequisites: A grade of C or better in HSA124.	LEC 2.0 2.0 2.0
HSA127	Nutrition Assistance Procedures	Practical application of Family Assistance procedures. Use of the Arizona Technical Eligibility Computer System and Department of Economic Security Family Assistance Administration (DES FAA) policy manual and procedures to complete Nutrition Assistance determinations. Interview and keying techniques and procedures also covered.	Prerequisites: A grade of C or better in HSA113.	L+L 2.0 4.0 4.0
HSA128	Cash Assistance Determination	Cash Assistance programs eligibility determination including regular Cash Assistance (CA), Two Parent Employment Program (TPEP), Grant Diversion (GD), and Kinship Care cash programs. Also covers Family Benefit Cap Period (FBCP) and Self-employment income, as well as renewals and change reporting requirements.	Prerequisites: None.	LEC 3.0 3.0 3.0

HSA130	Human Resource Management System	Introduction to the Human Resource Management System (HRMS). Covers basic components of the system as well as navigation and forms completion procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
HSA131	Nutrition Assistance Renewals	Overview of Federal and State policies and procedures for completing nutrition assistance renewals. Covers the renewal process, including prior investigation, timelines, compliance, and interview procedures in addition to making determinations, updating cases, and processing pending applications.	Prerequisites: None.	LEC 2.0 2.0 2.0
HSA132	Family Assistance Administration Management	Family assistance office management responsibilities. Covers workload management including forecasting, reports, and resource allocation. Also includes local office areas of supervision and evaluation	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
HSA150	Government Office Management	Development of skills to manage employees in the government assistance setting. Overview of management philosophies and techniques for effective time management, problem solving and communications	Prerequisites: None.	LEC 2.0 2.0 2.0
HSA152	Government Office Evaluations	Procedures for conducting evaluations of government assistance employees. Includes evaluation processes, the employee appraisal system, and rating guidelines. Required reports and documentation for managers	Prerequisites: A grade of C or better in HSA150.	LEC 2.0 2.0 2.0

HSA160	Employment Assistance Administration	Overview of organizational values and the role and responsibilities of case aides, including preliminary review of case management procedures. Covers the Administration of the Job Opportunities and Basic Skills (JOBS) Training program and customer service practices, communications techniques, case records, systems operations, and procedures.	Prerequisites: None.	LEC 3.0 3.0 3.0
HSA161	Employment Assistance Administration Lab	Practical application of Job Opportunities and Basic Skills (JOBS) training procedures. Includes state systems access and documentation procedures including referral and selection. Also covers case management assessment and management in addition to various support services.	Prerequisites: A grade of C or better in HSA160.	Laboratory 3.0 9.0 9.0
HSA162	Employment Assistance Account Entries	Skills development for state employment assistance programs customer account entries. Includes system access, terminology, and data entry procedures.	Prerequisites: A grade of C or better in HSA160.	LAB 1.0 2.0 2.0
HSA163	Employment Assistance Case Management	Further instruction in the administration of the Job Opportunities and Basic Skills (JOBS) Training program. Includes sanctionable and withholding issues as well as monitoring and evaluation of employment. Dispute resolution, fair hearings, and grievances procedures covered.	Prerequisites: A grade of C or better in HSA160.	LEC 3.0 3.0 3.0
HSA164	Employment Assistance Case Management Lab	Practical application of the Job Opportunities and Basic Skills (JOBS) Program Automated System (JAS). Includes procedures for verification and monitoring of work and community experience in addition to exclusions and deferrals. Special emphasis on case management skills and procedures.	Prerequisites: A grade of C or better in HSA162.	Laboratory 3.0 9.0 9.0

HSA165	Case Reading System for Government Assistance Program	Overview of the Case Accuracy Tracking System/Target Case Accuracy Tracking System (CAT/TARCATS) case tracking system. Examine ways to monitor employee performance using reports. Includes critical thinking and program evaluation skills	Prerequisites: Permission of Department or Division.	L+L 1.0 2.0 2.0
HSA166	Reading and Interpreting Government Assistance Reports	Procedures to generate and read reports for government assistance programs. Evaluate data and make adjustments according to the unit or individual worker's performance. Apply workload management principles when setting departmental goal	Prerequisites: Permission of Department or Division.	L+L 1.0 2.0 2.0
HSA167	Government Assistance Supervisor Basic	Development of skills to manage employees in the government assistance setting. Overview of management philosophies and techniques for effective time management, performance evaluation, and communications	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
HSA170	Employment and Training Administration I	Administration of the Employment and Training program using the Job Service Automated System (JSAS). Includes assessment and development of the Employment Plan Agreement (EPA) and case work techniques. Component activities and support services also covered	Prerequisites: None.	LEC 2.0 2.0 2.0
HSA172	Employment and Training Administration II	Further instruction in the administration of the Employment and Training program using the Job Service Automated System (JSAS). Includes sanctionable issues as well as monitoring and evaluation of employment. Dispute resolution, fair hearings and grievances procedures also covered	Prerequisites: A grade of C or better in HSA170.	LEC 2.0 2.0 2.0



HSA180	Arizona Financial Information System	Introduction to the Arizona Financial Information System (AFIS). Covers basic components of the system as well as data elements, navigation and forms completion procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
HSA200	Introduction to Arizona Health Care Cost Containment System (AHCCCS)	Introduction to Arizona Health Care Cost Containment System (AHCCCS) programs. Includes population, eligibility and application issues. Also covers effective communication, customer service, and interview skills	Prerequisites: None.	LEC 2.0 2.0 2.0
HSA202	Arizona Long Term Care System (ALTCS): Eligibility	Introduction to the Arizona Long Term Care System (ALTCS). Covers application eligibility and confidentiality issues. Also includes automated system, caseload management and change processing as well as using the ACE (AHCCCS (Arizona Health Care Cost Containment System) Customer Eligibility) Interactive Interview	Prerequisites: None.	LEC 2.0 2.0 2.0
HSA204	Arizona Long Term Care System (ALTCS): Advanced Eligibility	Covers advanced eligibility topics such as income, Share of Cost for social security recipients, transfer policies, trust policy, and Community Spouse eligibility	Prerequisites: None.	LEC 3.0 3.0 3.0
HSA206	Arizona Long Term Care System (ALTCS): Advanced Eligibility Topics	Overview of Arizona Long Term Care System (ALTCS) case management, acute care requirements, and non-covered medical expenses	Prerequisites: None.	LEC 2.0 2.0 2.0
HSA208	Arizona Long Term Care System (ALTCS): Non-Financial Eligibility	Non-financial requirements of Arizona Long Term Care System (ALTCS) eligibility and investigative interviewing techniques	Prerequisites: None.	LEC 2.0 2.0 2.0
HSA209	Computerized Systems for Eligibility Specialist	Computer systems and database for eligibility specialists. Usage, navigation, and practice of each system. Includes search function and data interpretation	Prerequisites: None.	L+L 2.0 3.0 3.0

HSA210	Arizona Long Term Care System (ALTCS): Resources and Income	Procedures, rules, and restrictions concerning various types of resources and income in the application process. Covers transfer of property, Share of Cost and Hearing Process, as well as Medicare Cost Sharing Programs and re-determinations	Prerequisites: None.	LEC 3.0 3.0 3.0
HSA211	Eligibility Specialist I	Overview of job responsibilities and agency functions for eligibility specialists. Includes organizational history, mission, and structure. Examines basic case processing steps	Prerequisites: None.	L+L 2.0 3.0 3.0
HSA213	Eligibility Specialist II	Additional basic knowledge for eligibility specialists. Covers the application process and timeline. Uses different online tools to manage cases.	Prerequisites: A grade of C or better in HSA211 or Corequisites: HSA211.	L+L 2.0 3.0 3.0
HSA215	Eligibility Introductory Lab	Introductory lab for eligibility specialists. Includes data verification, documentation and referrals. Processing eligibility cases emphasized	Prerequisites: None.	LAB 3.0 9.0 0.0
HSA217	Medical Assistance Eligibility Specialist I	Training for medical assistance eligibility specialists. Steps to access external computer database for information. Reviews confidentiality and sensitive information handling procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
HSA219	Medical Assistance Eligibility Specialist II	Concepts and processing steps for medical assistance eligibility specialists. Familiarizes with the renewal process and allocation guidelines. Uses computerized systems to handle client accounts.	Prerequisites: A grade of C or better in HSA217 or Corequisites: HSA217.	LEC 2.0 2.0 2.0
HSA221	Medical Assistance Eligibility Specialist III	Further training for medical assistance eligibility specialists. Further examination of income types and handling procedures. Lists supporting services available.	Prerequisites: A grade of C or better in HSA219 or Corequisites: HSA219.	LEC 1.0 1.0 1.0

HSA222	Advanced Eligibility Determination I	Advanced eligibility issues with regards to gross income, budgeting and beginning/terminated income. Includes policy for making changes, calculations for determinations, and effects of increase and decrease of benefits	Prerequisites: None.	LEC 3.0 3.0 3.0
HSA223	Eligibility Advanced Lab	Advanced lab for eligibility specialists. Interviewing of applicants included. Processing new and renewal eligibility cases emphasized	Prerequisites: A grade of C or better in HSA215.	LAB 3.0 9.0 0.0
HSA224	Advanced Eligibility Determination II	Advanced eligibility issues with regards to Federal and State policies and procedures for making changes to Food Stamp (FS), Medical Assistance (MA), and Aid to Families with Dependent Children (AFDC)/Cash Assistance (CA) cases. Includes changes in household, assistance, expenses and resources as well as non-compliance procedures	Prerequisites: A grade of C or better in HSA222.	LEC 2.0 2.0 2.0
HSA230	KidsCare Health Insurance I	Information and computer system knowledge for KidsCare health insurance eligibility specialists. Covers premium waiver and hearing request process. Examines various commonly used computersystems	Prerequisites: None.	LEC 1.0 1.0 1.0
HSA232	KidsCare Health Insurance II	Training for KidsCare health insurance eligibility specialists. In-depth knowledge on income levels and budget units. Review computer system usage and processing steps.	Prerequisites: A grade of C or better in HSA230 or Corequisites: HSA230.	LEC 2.0 2.0 2.0
HSE106	Introduction to HIPAA Privacy Rule	Purpose and intent of the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule. Regulation interpretation and application in the health care environment. Guidelines for development of key documents. Penalties for non-compliance	Knowledge of basic operations of a medical practice or other health care environment.	LEC 2.0 2.0 2.0

HSE110	Successful Grant Writing	Grant seeking and grant writing processes for the beginning grant writer. Pre-application preparation, application development, and grant proposal evaluation and follow-up. Includes development of grant applications for government and private funding sources	Prerequisites: None.	LEC 0.5 0.5 0.5
HSM122	Health Services Supervision	Skills and techniques for the leadership and supervision of health services employees. Emphasis placed on assertive supervision, effective human relations skills, and the enhancement of oral and written workplace communications	Prerequisites: None.	LEC 3.0 3.0 3.0
HSM125	Current Issues in Health Services Management	Overview of the inner workings of the health care industry and the forces that drive and control the delivery of health services. Explores financial, technological and human resources, regulatory systems, and national, state and local issues	Prerequisites: None.	LEC 3.0 3.0 3.0
HSM207	Health Service Management Internship	Application of leadership, supervisory and managerial skills and observation of administrative function in a specific health services setting.	Prerequisites: A grade of C or better in Any three (3) of the following four (4) courses: HSM122, or HSM125, or HSM222, or HSM226, or permission of Instructor.	LAB 3.0 15.0 0.0
HSM222	Health Services Management	The role and functions of management in understanding and building organizational effectiveness. Focuses on the manager as a leader and planner capable of developing motivated and committed employees and work teams	Prerequisites: None.	LEC 3.0 3.0 3.0
HSM226	Ethics and Legalities of Health Services Management	Identification, analysis, and problem solving related to legal and ethical issues in health services management. Includes an emphasis on employment law, confidentiality issues, accurate financial reporting and personal promotional preparation	Prerequisites: None.	LEC 3.0 3.0 3.0

HSM282AA	Volunteerism for Health Services Management: A Service Learning Experience	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in Any three (3) of the following four (4) courses: HSM122, or HSM125, or HSM222, or HSM226, or permission of Instructor.	LAB 1.0 1.0 1.0
HST180	Overview of Histology (Anatomic) Laboratory	Overview of anatomic laboratory services, anatomic laboratory professionals, and the role of the histology technician. Emphasis on certification, accreditation, and regulatory agencies. Application of process improvement, quality control, laboratory mathematics, infection control, sharps/mechanical hazards, documentation, medico-legal implications, and chemical hygiene principles. Includes information management in anatomic laboratories. Importance of management and supervision leadership principles and professional growth and ethical conduct.	Prerequisites: Admission to Histologic Technology program or permission of Program Director.	LAB 2.0 2.0 2.0
HST181	Chemistry of Fixation	Principles of fixation and fixative solutions. Anatomic laboratory instrumentation and specimen handling, identification, and tracking protocols. Emphasis on gross examination processes, tissue processing protocols, and specialized processing techniques.	Prerequisites: Admission to Histologic Technology program or permission of Program Director, and a grade of C or better in HST180.	L+L 3.0 3.0 3.0
HST182	Microtomy	Emphasis on decalcification techniques, ergonomic safety practices for microtomy, and frozen section techniques. Application of embedding orientation by tissue type. Procedures for paraffin embedding station, cryostat and rotary microtome set-up and maintenance, and sharps safety practices for the microtome. Includes techniques for microtomy, specialized microtomy, frozen section, and cytology specimen preparation.	Prerequisites: A grade of C or better in HST181.	L+L 5.0 4.0 4.0

HST183	Practicum: Chemistry of Fixation	Practicum in histology techniques performed in an anatomic laboratory. Application of clinical skills for specimen handling, identification, and tracking protocols. Use of anatomic laboratory instrumentation. Study of gross examination protocols. Demonstration of fixation techniques, paraffin processing protocols, and specialized processing techniques. Performance of clerical and computer functions using medico-legal guidelines for documentation. Use of professional and ethical conduct in all interpersonal communications.	Prerequisites: A grade of C or better in HST181 or permission of Program Director.	LAB 1.0 4.5 0.0
HST184	Practicum: Microtomy	Practicum in histology techniques performed in an anatomic laboratory. Use of decalcification and frozen section techniques. Includes embedding orientation by tissue type and ergonomic safety practices for microtomy. Procedures for the paraffin embedding station, cryostat and rotary microtome set-up and maintenance, and sharps safety practices for the microtome. Emphasis on techniques for microtomy, specialized microtomy, frozen section, and cytology specimen preparation.	Prerequisites: A grade of C or better in HST182.	LAB 1.0 4.5 0.0
HST185	Cellular Biological Staining	Recognition of basic cellular structure. Identification of carbohydrates classification, pigments, minerals, and lipids in tissues and connective tissue structures. Explanation of chemical staining theory. Stain principles and procedures for nuclear and cytoplasmic structures, carbohydrates and lipids, connective tissue, and tissue pigments and minerals stains.	Prerequisites: A grade of C or better in HST182. Corequisites: HST187.	L+L 5.0 4.0 4.0

HST186	Cellular Biological and Immunohistochemical Staining	Identification of pathologic organisms and neurological structures. Use of stains for microorganisms and neurological structures. Explanation of theories of histochemical and immunohistochemical staining. Procedures for histochemical and immunohistochemical stains. Overview of specimens for electron microscopy and autopsy procedures. Emphasis on assessing histology workflow processes, laboratory procedure manuals, and workload and productivity recording and monitors.	Prerequisites: A grade of C or better in HST185.	L+L 5.0 4.0 4.0
HST187	Practicum: Cellular Biological Staining	Practicum in histology techniques performed in an anatomic laboratory. Recognition of basic cellular structure, carbohydrate structures, connective tissue, lipid structures, and pigments and minerals in tissues. Application of chemical staining. Emphasis on stains for nuclear and cytoplasmic structures, carbohydrates and lipids, connective tissue, and tissue pigments and minerals stains.	Prerequisites: A grade of C or better in HST185.	LAB 1.0 4.5 0.0
HST188	Practicum: Cellular Biological and Immunohistochemical Staining	Practicum in histology techniques performed in an anatomic laboratory. Identification of pathologic organisms and neurological structures. Use of stains for microorganisms and neurological structures. Application of histochemical and immunohistochemical stains. Observation of electron microscopy and autopsy procedures. Emphasis on histology workflow processes, laboratory procedure manuals, and workload and productivity recording and monitors.	Prerequisites: A grade of C or better in HST186.	LAB 1.0 4.5 0.0

HTM150	Introduction to Healthcare IT and Systems	Introduction to current and emerging Healthcare IT systems with particular emphasis on healthcare information and data, governance, information systems and technologies, and industry challenges in a value-added healthcare environment.	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	LEC 3.0 3.0 3.0
HTM200	Healthcare IT Software Infrastructure: Interoperability, Security and mHealth	Application of industry-specific IT skills to entry-level Healthcare IT software development projects, with particular skills emphasis on high-growth areas such as interoperability, security and Mobile Health (mHealth).	Prerequisites: A grade of C or better in [(CIS133AA and CIS133BA and CIS133CA) or CIS133DA] and CIS150AB and HTM150 and permission of Program Director.	L+L 3.0 4.0 4.0
HTM230	Healthcare Data Analytics, Artificial Intelligence (AI) and Machine Learning	Overview of theories and practical applications of Data Analytics, Artificial Intelligence (AI), and Machine Learning. A focus on trends, opportunities, and emerging uses, as well as best practices, limitations, and ethical implications. Hands-on practice with current tools to solve complex healthcare problems.	Prerequisites: A grade of C or better in (BPC110 or CIS105) and HTM150.	L+L 3.0 4.0 4.0
HTM250	Healthcare IT Systems Development Life Cycle (SDLC)	Introduction to the Systems Development Life Cycle (SDLC) methodologies and tools currently used on healthcare Information Technology (IT) projects, with particular emphasis on software development. Experience with application development and testing tools in a project-based lab setting.	Prerequisites: A grade of C or better in CIS224 and HTM200 or Corequisites: CIS224 and HTM200.	L+L 3.0 4.0 4.0
HTM270	Healthcare IT Systems Capstone	Culminating application of the skills, knowledge, communication and critical thinking skills from the Healthcare Technology Systems program to address industry-specific challenges. Includes investigation and application of current and emerging healthcare technologies.	Prerequisites: A grade of C or better in HTM250.	L+L 3.0 4.0 4.0



HTM280	Healthcare Technology Systems Career Strategies	Overview of the career exploration and planning process designed to assist students interested in healthcare technology systems and related fields to transition into the professional world. Focuses on current occupational trends and career decision-making strategies with a special emphasis on experiences within the field. Includes practice with self-presentation in the professional world such as effective resumes, personal portfolio, interviewing skills, online presence and professional appearance.	Prerequisites: A grade of C or better in HTM150.	L+L 3.0 2.0 2.0
HUC110	Issues in Health Unit Coordinating	History of the health unit coordinating profession, National Association of Health Unit Coordinators (NAHUC) and certification process. Management techniques for health unit coordinators. Communication issues relevant to health unit coordinators. Resume writing.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: HCC145 and (HCC130 or (HCC130AA, HCC130AB, HCC130AC, HCC130AD, HCC130AE and HCC130AF)). Corequisites: HUC113, HUC114, HUC115 and HUC116.	LEC 1.0 1.0 1.0
HUC111	Communication and Hospital Unit Management in Health Unit Coordinating	History of the health unit coordinating profession, National Association of Health Unit Coordinators (NAHUC) and certification process. Responsibilities of a hospital unit coordinator (HUC). Includes terminology, paper and electronic forms, electronic medical records patient charts, admission/discharge of patients, preoperative and postoperative procedures. Management techniques for health unit coordinators as workflow and process facilitators. Communication issues relevant to health unit coordinators.	Prerequisites: None.	L+L 2.0 3.0 3.0

HUC113	Diagnostic Tests and Treatments	Understanding and interpreting physician's orders for the Health Unit Coordinator (HUC) and other health care workers. Terminology, symbols and abbreviations for diagnostic procedures and treatments.	Prerequisites: None.	LEC 4.0 4.0 4.0
HUC114	Health Unit Coordinator Procedures	Application of unit coordinating skills and procedures in the laboratory setting. Transcription of traditional written physician orders and paper-based charts. Electronic patient charts in relation to coordination of hospital unit activities and workflow facilitation. Instruction in utilization of electronic patient charts. Initiation of electronic patient charts and entering physicians' orders to facilitate the transition to fully implemented electronic patient charts with computer physician order entry (CPOE).	Prerequisites: None.	L+L 2.0 4.0 4.0
HUC115	Health Unit Coordinator Clinical	Application of health unit coordinator skills and procedures in the health care setting under the supervision of an instructor and preceptor.	Prerequisites: None.	LAB 2.0 12.0 0.0
HUC116	Health Unit Coordinating Clinical Seminar	Clinical guidelines and hospital requirements for health unit coordinating clinical. Preparation for an electronic and non-electronic medical record based facility and/or unit. Review and verification of skills, competencies and procedures listed in the Clinical Evaluation Handbook and Skills List. Preparation for National Association of Health Unit Coordinators (NAHUC) national certification exam. Job interview preparation including resume preparation and document submission.	Prerequisites: None.	LEC 1.0 1.0 1.0

HUC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
HUC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
HUC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

HUC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
HUC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HUC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

HUC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HUM100	Great Ideas Symposium	Interrelationships among cultures and behavior in the modern world. Focuses on selected themes and topics	Prerequisites: None.	LEC 1.0 1.0 1.0
HUM101	General Humanities	A general humanities course concentrating on three great ages of outstanding human achievement: The Golden Age of Greece, the Renaissance and the 20th Century	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM107	Humanities Through the Arts	Introduction to humanities including film, drama, music, literature, painting, sculpture, and architecture	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM108	Contemporary Humanities	An exploration of human expression in contemporary arts and sciences	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM120	Cultural Viewpoints in the Arts	Introduction to the influence of culture and ethnicity on the artist, including factors such as race, religion, gender, class, sexual preference, age, and region. Lecture and discussion on various art forms, including literature, visual arts, music, dance, film, and theater.	Prerequisites: None.	LEC 3.0 3.0 3.0

HUM190AA	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0
HUM190AB	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0
HUM190AC	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0
HUM190AD	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0

HUM190AE	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0
HUM190AF	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0
HUM190AG	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0
HUM190AH	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0

HUM190AI	Honors Forum	Interdisciplinary studies of selected issues confronting the individual and society. Formal lectures followed by informal discussions with outstanding scholars and social leaders. Supplemented by readings and pre- and post-forum discussion and critique. Varied content from module to module due to changing forum themes and issues	Admission to the College Honors Program or Permission of Instructor.	LEC 1.0 1.0 1.0
HUM201	Humanities: Universal Themes	Study of worldviews in a variety of historical and contemporary world cultures, including analysis of origin and creation myths, artistic expression, spirituality, and the natural environment.	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM202	Humanities: Universal Themes	The hero/heroine; fool, the social world, and the future as themes in the humanities	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM205	Introduction to Cinema	Survey of the history and development of the art of motion pictures, including criticism of aesthetic and technical elements.	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM206	Introduction to Television Arts	History and development of electronic media and its impact on popular arts.	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM209	Women and Films	Analysis of images of women in films from both historical and contemporary perspectives	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM210	Contemporary Cinema	A study of contemporary films, directors and critics with emphasis on evaluating film as an art form.	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM211AA	Foreign Films: Classics	Analysis of contributions of foreign directors to the art and history of motion pictures through a study of selected films	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM211AE	Foreign Films: Italian	Analysis of contributions of Italian directors to the art and history of motion pictures through a study of selected films.	Prerequisites: None.	LEC 3.0 3.0 3.0



HUM212	Documentary Film	Survey of documentary (non-fiction) film with an emphasis on international issues. Focus on primary types of documentary film, including direct address, direct cinema, interviews, etc	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM213	Hispanic Film	Analysis of Hispanic film as art form and as social commentary	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM214	African-Americans in Film	Study of films featuring African-American performers and directors from the Silent Era to the present. Emphasis on the historical and social elements of African Americans in film and basics of film analysis	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM215	Film Comedy	Explores the basics of humor in film by tracing its roots through a historical examination of a variety of arts, artists, and theorists. Focuses on films' unique contributions to the world of laughter. Investigates how comedy, and film comedy in particular, provides an essential and unifying force for culture and society.	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM216	The Films and Career of Alfred Hitchcock	Focuses on the career, films, and cinematic and cultural influence of acclaimed director Alfred Hitchcock. Includes the director's cinematic innovations, techniques, major films, and his influence on modern filmmakers.	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM220	History and Film	Presents historically based films and analyzes their accuracy, filmmaking techniques, and their value as cinematic historical records of U.S. and global events.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
HUM225	Introduction to Popular Culture	Introduction to major topics in the field of popular culture studies. Includes basic theories, methods, and concepts used to analyze popular culture texts and practices.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0

HUM235	Disability Studies	Considers representations of disability as artifacts of Western and non-Western cultures against changing backdrops in knowledge, ideas, beliefs, values, and practices. Works to build awareness, understanding, and empathy in regards to diverse forms of humanity and to de-stigmatize disease, illness, and impairment.	Prerequisites: A grade of C or better in ENG101 and (RDG100 or RDG100LL or RDG111 or RDG112 or RDG113 or eligibility for CRE101 as indicated by appropriate reading placement test score).	LEC 3.0 3.0 3.0
HUM245	Introduction to Holocaust Studies	Introduction to essential information about the Holocaust. Provides theological, social and political background to establish contexts of anti-Semitism, especially in 19th and 20th centuries, with particular attention to National Socialist ideologies. Ghetto and camp life, including resistance, are explored. Emphasis is on texts of the Holocaust, including historical documents, participant testimonies, fiction, creative non-fiction, and poetry, much of which involves theological and moral debate. Includes analysis of supplementary visual material and some performing arts.	Prerequisites: None. CRE101 or CRE111 or equivalent as indicated by appropriate reading placement test score recommended but not required.	LEC 3.0 3.0 3.0
HUM250	Ideas and Values in the Humanities	An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the early civilizations to the Renaissance, including western and non-western cultures.	Prerequisites: A grade of C or better in ENG101.	LEC 3.0 3.0 3.0
HUM251	Ideas and Values in the Humanities	An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the Renaissance to modern period, including Western and Non-Western cultures.	Prerequisites: A grade of C or better in ENG101.	LEC 3.0 3.0 3.0
HUM260	Intercultural Perspectives	Cultural, literary, and artistic expressions of Native, Hispanic, and African Americans. Includes traditional and modern work and contribution to American civilization	Prerequisites: None.	LEC 3.0 3.0 3.0

HUM261	Asian Ideas and Values	An examination of Asian cultural traditions for their humanistic ideas and values: the arts, music, literature, religions, and philosophies of Asia, with emphasis on India and its sphere of influence in southeast Asia, and on China and its sphere of influence, particularly Japan	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM292	The Art Of Storytelling	Explore the art and origin of storytelling. Provide a variety of storytelling techniques, styles and exercises to enhance the delivery of telling stories. Assist in the integration and application of storytelling to the learning environment in the classroom	Prerequisites: None.	LEC 3.0 3.0 3.0
HUM295	Topics in the Humanities	Exploration of selected topic in the humanities. Focuses on a theme, concept, era, or genre. Analysis and interpretation of topic's representation, development, and significance in at least three different humanities areas and in a variety of world cultures.	Prerequisites: A grade of C or better in (ENG101 or ENG107) or permission of Instructor.	LEC 3.0 3.0 3.0
HUM296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

HUM296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
HUM296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
HUM296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

HUM298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HUM298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
HUM298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

HVA101	Refrigeration Applications and Components I	Major components of refrigeration systems. Properties of refrigerants and piping practices. Principles of pressure, work, energy, power, matter, internal energy, heat, temperature and the ideal gas processes. Saturated and superheated vapors. Pressure-enthalpy chart and its component parts, vapor compression system, cycle analysis of a single saturated cycle.	Prerequisites: None. Corequisites: FAC/HVA101LL or permission of Instructor.	LEC 3.0 3.0 3.0
HVA101LL	Refrigeration Applications and Components I Lab	Servicing refrigeration units. Includes soldering tubing, installing/removing manifold gauge set, evacuating and charging the system. Emphasis on safety.	Prerequisites: None. Corequisites: FAC/HVA101 or permission of Instructor.	LAB 1.0 3.0 3.0
HVA103	Refrigeration Applications and Components II	Actual refrigerating cycles and pressure-enthalpy analysis of chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) replacements. Selection of refrigeration components, sizing, and layouts of refrigerant piping, supermarket refrigeration system operation.	Prerequisites: A grade of C or better in HVA/FAC101. Corequisites: HVA103LL.	LEC 3.0 3.0 3.0
HVA103LL	Refrigeration Applications and Components II Lab	Pressure-enthalpy evaluation of operating systems from a simple saturated cycle to actual operating conditions. System performance evaluation including evaporator superheat, adjustments of suction pressure regulators and compressor crankcase pressure regulator, and evaluation of refrigerant piping.	Prerequisites: A grade of C or better in HVA/FAC101. Corequisites: HVA103.	LAB 1.0 3.0 3.0

HVA104	EPA Section 608 Technician Preparation and Certification	Laws, standards and procedures for the preparation to complete the certification for the Environmental Protection Agency (EPA) SECTION 608 - stationary equipment. Core certification requirements for Type I Technicians, Type II Technicians, Type III Technicians, and Universal Technicians. Type I Technician - primarily works on small appliances. Type II Technician - primarily works on appliances/equipment using high and very high pressure refrigerant. Type III Technician - primarily works on appliances/equipment using a low pressure refrigerant. Universal Technician - for servicing all appliances.	Prerequisites: None.	LEC 0.5 0.5 0.5
HVA105	Electricity for Industry	Electricity related to industrial applications. Operation of and safety protocols for the use of electrical meters. Electrical loads calculations and evaluation of electro-mechanical power sources. Single-phase motors, motor resistance and motor terminals. Function of electro-magnetic solenoids and transformers. National Electric Code.	Prerequisites: None. Corequisites: ELC105LL FAC105LL HVA105LL or permission of Instructor.	LEC 3.0 3.0 3.0
HVA105LL	Electricity for Industry Lab	Diagramming and assembling series circuits, parallel circuits and wiring relays, thermostats, switches and lights. Electrical readings on compressors. Emphasis on safety.	Prerequisites: None Corequisites: ELC/FAC/HVA105 or permission of Instructor.	LAB 1.0 3.0 3.0

HVA112	Heating and Air Conditioning	Types and styles of cooling equipment and duct systems. Methods of supplying air to spaces for heating and cooling. Human comfort factors related to heating and cooling. Psychrometric terminology and applications. Operation, control, and metering devices for heat pumps and package air conditioning systems. Basic heating and ventilating equipment including performance measurement of heating and combustion equipment. Procedures used with DX cooling and gas-fired and electric heating equipment. Troubleshooting techniques, local gas and electric codes, and safety precautions.	Prerequisites: A grade of C or better in HVA/ELC/FAC105. Corequisites: HVA112LL.	LEC 3.0 3.0 3.0
HVA112LL	Heating and Air Conditioning Lab	Application of routine procedures related to heating and air conditioning. Includes identification of air conditioning and heating system components, evaluation of energy balance, identification of electrical malfunctions, and proper refrigerant handling procedures. Emphasis on safety.	Prerequisites: A grade of C or better in HVA/ELC/FAC105. Corequisites: HVA112.	LAB 1.0 3.0 3.0
HVA131	Electrical Systems	Electricity related to residential and light commercial applications, to include common electrical components, AC and DC circuits, and electrical safety. Provides an introduction to reading, interpreting, and creating wiring diagrams and the application of electrical power. Operation and use of specific meters, tools, and an introduction to National Electrical Code (NEC).	Prerequisites: None.	L+L 3.5 4.0 4.0



HVA143	Load Calculation and Duct Design	Heat transmission factors calculations for specific types and combinations of construction materials. Application of design factors for cooling and heating load determination. Methods for residential applications. Design of residential and light commercial ducting systems. Calculation of duct size for constant and variable air flow, system operating characteristics and air measuring devices. Protocols to test, adjust, and balance an air distribution system	Prerequisites: None.	LEC 3.0 3.0 3.0
HVA210	Facilities Air Conditioning Systems	Fundamental principles of air conditioning including all-air, all-water (hydronic) and air-water combination systems. Overview of the physical principles, including air distribution systems and heating and cooling load calculation. System components and application theory for boilers, chillers, pumps, fans, and cooling towers. Theory and application of central air conditioning systems, air cleaning and humidification devices, pressure boosting, heat storage, expansion and pressurization equipment. Properties of water, pressure distribution in hydronic systems, flow in pipes, pressure drop/head loss, pump applications and pressurization of open and closed hydronic systems. Fundamentals of low and high temperature water systems.	Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210LL or permission of Department or Division.	LEC 3.0 3.0 3.0

HVA210LL	Facilities Air Conditioning Systems Lab	Routine procedures on operational central forced-air conditioning systems and hydronic pumping systems. Components and function of large chillers, cooling towers, hot water boilers, associated piping, pumps and constant volume and variable air volume (VAV) air handlers. Perform pump sizing calculations and measurements. Perform measurements and calculations of pressure and air velocity in ducts. Apply the principles of psychometrics to central air handling systems. Evaluation of the energy balance of components and systems. Personal and equipment safety.	Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210 or permission of Department or Division.	LAB 1.0 3.0 3.0
HVA231	Codes	Local codes, Federal Housing Administration and Urban Development standards. Acceptable building practices based on the Uniform Building Code, National Electric Code, Uniform Mechanical Code, and the Uniform Plumbing Code. Impact of American with Disabilities Act (ADA) on new and existing facilities	Prerequisites: None.	L+L 3.0 5.0 5.0
HVA234	HVAC and Refrigeration Installation	Industry codes used by the trades. Pipe and duct installation practices. Procedure for the installation of heating, ventilation, air conditioning and refrigeration (HVAC) equipment. Calculation of roof pitch and wire size for HVAC equipment. Start-up procedures for HVAC equipment.	Prerequisites: A grade of C or better in ELC/FAC115 or permission of instructor. Corequisites: HVA234LL.	LEC 3.0 3.0 3.0
HVA234LL	HVAC and Refrigeration Installation Lab	Practices and application for the installation of residential and commercial refrigeration and air conditioning equipment. Actual installation problems used as the basis of discussion and code application.	Prerequisites: A grade of C or better in ELC/FAC/HVA115 or permission of instructor. Corequisites: HVA234.	LAB 1.0 3.0 3.0

HVA296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
HVA296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
HVA296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

HVA296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
HVA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
HVA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

HVA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
HVC101	HVAC for Residential Systems I	Introduction to major components and functions of residential heating, ventilation, and air conditioning (HVAC) systems, to include heat flow and basic electrical concepts.	Prerequisites: None.	130
HVC102	HVAC for Residential Systems II	Applications of theory and basic principles of refrigeration in residential heating, ventilation, and air conditioning (HVAC) systems. Includes installations, diagnostics, preventative and predictive maintenance, and customer service.	Prerequisites: None.	130
HVC110	HVAC Basics	Learn basic principles of heating, ventilation, and air conditioning (HVAC), trade-related mathematics and electrical concepts.	Prerequisites: None.	224
HVC111	HVAC Systems	Learn the principles of heating, cooling and air distribution.	Prerequisites: None.	132
HVC112	HVAC Installations	Gain knowledge of the principles and procedures of heating, ventilation, and air conditioning (HVAC) piping installation.	Prerequisites: None.	132
HVC113	HVAC Troubleshooting	Understand the principles and procedures of heating, ventilation, and air conditioning (HVAC) systems troubleshooting.	Prerequisites: None.	136
HVC120	HVAC Installation	Introduction to installation of residential heating, ventilation, and air conditioning (HVAC) systems. Includes startup and verification of proper equipment operation.	Prerequisites: A grade of C or better in HVC102 or permission of department.	130

HVC130	HVAC Troubleshooting	Introduction to troubleshooting the components of residential heating, ventilation, and air conditioning (HVAC) systems, to assure proper equipment operation.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: HVA120 or permission of department.	130
IBS101	Introduction to International Business	A basic overview of international business to introduce students to international trade concepts. Focus of the course is on international business environment issues that influence global business practices, decisions and applications	Prerequisites: None.	LEC 3.0 3.0 3.0
IBS104	International Finance	The development of foreign exchange and international banking is examined. Methods of export financing, including both short- and medium-term credit and an in-depth review of application to and administration of government loan programs are covered. Important factors in country risk analysis are discussed	Prerequisites: None.	LEC 1.0 1.0 1.0
IBS105	International Law	Introduction to the legal aspects and ramifications of international trade topics including multinational enterprises, sovereignty, technology transfer, arbitration, negotiation and diplomacy	Prerequisites: None.	LEC 2.0 2.0 2.0

IBS108	Basics of Import/Export Operations	An overview of the steps involved in importing and exporting a product or service from beginning to end. Course includes an introduction to the United States Customs Service, what customs brokers do, duty rate structure and determination, basic laws affecting imports, currency exchange and letters of credit. Practical advice about storage and transportation of shipments after they have cleared customs. Other topics will include marketing, organization, regulations, terms of sale, documentation, shipment and financing involved with international enterprises, sovereignty, technology transfer, arbitration, negotiation, and diplomacy	Prerequisites: None.	LEC 2.0 2.0 2.0
IBS109	Cultural Dimension for International Trade	The importance of cultural sensitivity in international business relations investigated by studying the impact of geography, history, religion, politics, customs and cross-cultural communications on society	Prerequisites: None.	LEC 3.0 3.0 3.0
IBS116	Export/Import Management	Basics of importing and exporting processes with focus on documentation and procedures. Includes transportation and distribution options, freight forwarders, International Common Terms (INCO) shipping terms, packaging strategies, contract negotiation, and execution of international contracts	Prerequisites: A grade of C or better in IBS101 or permission of Instructor.	LEC 3.0 3.0 3.0
IBS118	International Marketing Management	Planning, implementing, and managing international marketing strategies through application of international marketing research and evaluation in diverse cultural, economic, and political environments. Emphasis on implementation of product, price, promotion, and distribution strategies	Prerequisites: A grade of C or better in IBS101 or permission of Instructor.	LEC 3.0 3.0 3.0

IBS121	Export Marketing Case Studies	Individual case studies of actual companies performing export business with detailed analysis of Maricopa County, United States, foreign and transnational companies	Prerequisites: None.	LEC 2.0 2.0 2.0
IBS123	U.S. Customs and Export Licensing Regulations	Requirements for importing into the United States, and for export clearance, licensing, and foreign entry. Includes role of customs brokers, duty rate structure and determination as well as Commerce Control List (CCL) and Export Control Commodity Numbering (ECCN), export licenses, and governmental requirements regarding exports	Prerequisites: A grade of C or better in IBS101 or permission of Instructor.	LEC 3.0 3.0 3.0
IBS140	International Financial Management	Development of foreign exchange and international banking, including methods of payment, export financing, and application for and administration of government loan programs, country risk analysis, and negotiation and processing of letter of credit and other payment methods	Prerequisites: A grade of C or better in IBS101 or permission of Instructor.	LEC 3.0 3.0 3.0
IBS201	International Studies for Business	Provides an overview of the major issues faced by managers in international business. Focuses on cultural sensitivity issues and applying concepts to real-world business situations through case studies and experiential exercises.	Prerequisites: None.	L+L 3.0 3.0 3.0
IBS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0



ICE220	Sectional Anatomy	Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity.	Prerequisites: (BIO160 or BIO201) and (HCC145 or HCC146), or a graduate of a related medical program of study or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography OR Admission to the Medical Radiography Program or permission of Instructor.	LEC 3.0 3.0 3.0
ICE223	Introduction to Computed Tomography	Overview of the principles and operation of computed tomography (CT) scanner. Content includes history, physics processes, instrumentation components, imaging acquisition, reconstruction and display for computed tomography imaging.	Prerequisites: Admission to the Medical Radiography Program or permission of Instructor.	LEC 1.0 1.0 1.0
ICE229	Magnetic Resonance (MR) Multi-Planar Sectional Anatomy	Three dimensional anatomy presented in transverse, sagittal and coronal planes of specified regions of the human body as viewed from magnetic resonance imagery. Includes structure identification of the bones, muscles, vascular system, organs, soft tissue components and weighted imaging.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (certified by American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography), or (Radiography, Radiation Therapist, Nuclear Medicine, or Sonography student currently enrolled at GateWay), or registry eligible graduate] and DMI/DMS/ICE220 and ICE233.	LEC 2.0 2.0 2.0

ICE231	Professional and Patient Interactions	Principles of verbal and non-verbal communication skills through the development of understanding self, patients, colleagues and others. Includes verbal communication, written instructions, communications devices, telephone protocol, resume writing and job interviewing techniques	Prerequisites: None.	LEC 2.0 2.0 2.0
ICE233	Fundamentals of Magnetic Resonance Imaging (MRI)	Overview of magnetic resonance imaging, program policies and student responsibilities. Includes fundamental principles of magnetic resonance imaging (MRI), primary and secondary equipment, and MRI terminology. Imaging parameters, clinical applications overview for MRI and preparation for physics, instrumentation, and safety coursework. Basic overview of safety issues and MRI contrast agents.	Prerequisites: (Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (certified by American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography), or (Radiography, Radiation Therapist, Nuclear Medicine or Sonography student currently enrolled at GateWay), or registry eligible graduate. Corequisites: DMI/DMS/ICE220 or permission of Department or Division.	LEC 1.0 1.0 1.0
ICE240	Fundamentals of Positron Emission Tomography	Overview of Positron Emission Tomography (PET). Comparison to other diagnostic imaging modalities. History of PET, applications and importance. Introduction to PET radiation safety	Completion of Associate in Applied Science in Medical Radiography or completion of Associate in Applied Science in Nuclear Medicine Technology or completion of Certificate of Completion in Radiation Therapy program or Corequisites: DMI220 ICE220 or permission of Department or Division.	LEC 1.0 1.0 1.0

ICE248	Computed Tomography (CT) Multi-Planar Sectional Anatomy	Sectional human anatomy in the transverse, sagittal and coronal planes. Multi-planar emphasis on the musculoskeletal system to include multi-planar imaging of the facial bones, cervical, thoracic and lumbar spine, and extremities; and the heart and vascular structures.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduates] and DMI/DMS/ICE220 and (DMI/ICE223 or NUC250) with a grade of "C" or higher, or permission of Instructor.	LEC 2.0 2.0 2.0
ICE250AA	Screening Mammography	Basic mammography. Including anatomy, positioning, equipment, patient history, clinical breast examination and film evaluation related to screening mammography	Graduate radiologic technologist (A.R.R.T.) or permission of Instructor.	LEC 0.5 0.5 0.5
ICE250AB	Diagnostic Positioning and Special Views for Mammography	Basic mammography. Positioning for the diagnostic examination Special views, equipment characteristics, specifications, risk factors and film evaluation related to pathology	Prerequisites: A grade of C or better in ICE250AA or permission of Instructor.	LEC 0.5 0.5 0.5
ICE250AC	Special Mammographic Procedures	Complex mammography examinations. Breast cancer and imaging characteristics. Advanced pathology, needle biopsy, needle localization, needle aspiration and ductogram procedures, including integrating imaging modalities	Prerequisites: A grade of C or better in ICE250AB or permission of Instructor.	LEC 0.5 0.5 0.5
ICE250AD	Problem Solving for Mammographers	Problem solving and quality assurance for mammography. Mammography Quality Standards Act (MQSA) requirements for mammography	Prerequisites: A grade of C or better in ICE250AC or permission of Instructor.	LEC 0.5 0.5 0.5

ICE250AE	Routine Mammography Positioning	Basic mammography positioning laboratory experience. Breast self-examination. Positioning and equipment used for screening and diagnostic mammography procedures. Evaluation of positioning techniques.	Prerequisites: A grade of C or better in ICE250AA and ICE250AB or Mammographer or permission of Instructor.	LEC 0.5 0.5 0.5
ICE250AF	Digital Mammography	Basics of digital imaging and specifics with respect to Full Field Digital Mammography (FFDM). Components of acquisition computed radiography/digital radiography (CR/DR), image processing and displays, digital breast tomosynthesis and advantages of digital imaging over film screen breast imaging. Review of Computer Assisted Detection (CAD) and diagnosis and use of Picture Archive and Communication System (PACS) for simplified storage, access and transmission of images. Review of statistical studies of research for the top clinical trials for promotion of digital mammography.	Current certification in radiography through American Registry of Radiologic Technologists (ARRT) or permission of Instructor.	LEC 0.5 0.5 0.5
ICE254	Advanced Imaging Practicum	Advanced imaging procedures for the Graduate Radiologic Technologist from American Registry of Radiologic Technologists (ARRT) or registry eligible graduate performed under strict supervision. Use of correct technical and positioning techniques. Apply safety measures and procedures established by the institution and college. Observe ethical and legal guidelines and use of effective communication skills.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduates] or permission of Instructor.	LAB 1.0 6.0 0.0

ICE263	Computed Tomography Physics and Instrumentation	Overview and evolution of Computed Tomography (CT) in medical imaging to include: X ray production, CT principles, system components and operation; image acquisition, processing, reconstruction, and display; artifacts, quality assurance, radiation dosimetry and patient safety; contrast administration, imaging protocols; and competencies as outlined by American Registry of Radiologic Technologists (ARRT) for the CT Certification Examination.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduates] and DMI/DMS/ICE220 and (DMI/ICE223 or NUC250) with a grade of "C" or higher, or permission of Instructor.	LEC 3.0 3.0 3.0
ICE264	MRI Physics, Instrumentation and Safety	An overview into the physics, equipment, physical design, and image characteristics of Magnetic Resonance Imaging (MRI) systems.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (certified by American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography), or (Radiography, Radiation Therapist, Nuclear Medicine, or Sonography student currently enrolled at GateWay), or registry eligible graduate] and DMI/DMS/ICE220 and ICE233.	LEC 3.0 3.0 3.0

ICE265	Computed Tomography Procedure Protocols	Standard procedures and protocols for Computed Tomography (CT) imaging in alignment with the American Society of Radiologic Technologists (ASRT) examination curriculum outline. Includes patient preparation and safety, choosing appropriate protocols, interventional procedures, contrast indicators, post-exam processing quality issues, and adapting to atypical scanning situations.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduate] and (DMI/ICE223 or NUC250), and ICE248, and ICE263 with a grade of "C" or higher, or permission of Instructor.	LEC 3.0 3.0 3.0
ICE267	Computed Tomography Advanced Imaging Practicum	Computed Tomography advanced imaging clinical practicum for those certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or current Radiography or Nuclear Medicine student, or registry eligible graduates to perform under strict supervision. Use of correct computed tomography instrumentation, protocol implementation and positioning techniques. Apply patient safety measures and follow As Low As Reasonably Achievable (ALARA) practices to reduce radiation dose as established by the institution. Practice within established ethical and legal guidelines. Use effective communication skills.	Prerequisites: Currently enrolled in the Computed Tomography Program.	LAB 2.0 12.0 0.0

ICE268	MRI Advanced Imaging Practicum	Advanced Magnetic Resonance imaging (MRI) clinical practicum is for those certified by the American Registry of Radiologic Technologists (ARRT) in Radiography, Radiation Therapy, or Sonography, or certified by ARRT of the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine. Use of correct magnetic resonance imaging instrumentation, protocol implementation and positioning techniques. Apply MRI safety, quality control procedures and effective patient care and communication skills.	Prerequisites: Currently enrolled in the Magnetic Resonance Imaging Program.	LAB 2.0 12.0 0.0
ICE269	Magnetic Resonance Procedure Protocols	Imaging techniques related to the central nervous system (CNS), neck, thorax, musculoskeletal system and abdominopelvic regions. Specific clinical application, available coils and use. Considerations in scan sequences, specific choices in protocols including slice thickness, phase direction, flow compensation, and positioning criteria. Anatomical structures and plane that best demonstrates anatomy. Signal characteristics of normal and abnormal structures.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or Certified by the American Registry of Diagnostic Medical Sonography (ARDMS) or (Radiography or Nuclear Medicine student), or registry eligible graduate] and ICE233 and ICE264 with a grade of "C" or higher, or permission of Instructor.	LEC 3.0 3.0 3.0
ICE270	Contrast Media	Functions and applications of contrast media used in diagnostic radiographic imaging procedures. Chemical characteristics and properties of contrast media. Indications and contraindications including potential hazards of contrast media administration. Adverse reactions, patient care associated with reactions and medicolegal issues associated with administration of contrast media	Graduate radiologic technologist or permission of Instructor.	LEC 0.5 0.5 0.5

ICE271	Physiologic Monitoring	Physiologic monitoring to include electrophysiology of the heart, electrocardiography, rhythms and dysrhythmias. Hemodynamic monitoring including equipment, parameters, and cardiovascular pressures. Vital signs to include normal and abnormal values	Graduate radiologic technologist or permission of Instructor.	LEC 0.5 0.5 0.5
ICE272	Magnetic Resonance Pathology	Common pathologies found in magnetic resonance imaging, their appearance with various imaging protocols including all commonly imaged body systems and areas. Case studies and images of the pathologies to reinforce the lectures.	Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or Certified by the American Registry of Diagnostic Medical Sonography (ARDMS) or (Radiography or Nuclear Medicine student), or registry eligible graduate] and ICE233 and ICE229 with a grade of "C" or higher, or permission of Instructor.	LEC 3.0 3.0 3.0
ICE273	Computed Tomography Pathology	Common diseases diagnosed using Computed Tomography (CT) imaging. Appearance of pathology on CT to include: physiology, etiology, indications for exam, findings, and diagnosis. Case studies, images, and descriptions of pathologic conditions in various body systems will be presented in alignment with CT certification guidelines published by the American Registry of Radiologic Technologists (ARRT).	[(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduate] and DMI/DMS/ICE220 and ICE248 with a grade of "C" or higher, or permission of Instructor.	LEC 3.0 3.0 3.0



ICE290	Registry and Board Examinations Preparation	Preparation for the American Registry of Radiologic Technologist ( ARRT) and the Medical Radiologic Technology Board of Examiners (MRTBE)examinations. Review of the ARRT and MRTBE content specifications, techniques for preparation and review of current literature	Qualified individuals preparing for the ARRT and MRTBE or permission of Department or Division.	LEC 1.0 1.0 1.0
ICE291	Computed Tomography Registry and Board Exam Preparation	Discussion of concepts outlined in the American Registry of Radiologic Technologists (ARRT) published content specifications for their post- primary certification exam in computed tomography (CT).	Prerequisites: A grade of C or better in DMI/DMS/ICE220, ICE248 and ICE263 or permission of Instructor.	LEC 1.0 1.0 1.0
ICE292	MRI Board Exam Review Preparation	Preparation for the American Registry of Radiologic Technologists (ARRT) Medical Resonance Imaging (MRI) examination. Review of elements required to pass the AART examination, including patient care and safety, imaging procedures, data acquisition, and physical principles of image formation.	Prerequisites: A grade of C or better in DMI220, ICE220, ICE229, ICE233, ICE264, ICE269 and ICE272. Corequisites: ICE254.	LEC 1.0 1.0 1.0
ICE293	Registry Examination Preparation in Vascular- Interventional Radiography	Preparation for the American Registry of Radiologic Technologist (ARRT) in Vascular Interventional Radiography examination. Review of the ARRT content specifications, techniques for preparation, and review of current literature.	Registered Radiographers preparing for the American Registry of Radiologic Technologist (ARRT) Vascular Interventional Radiography examination or permission of Instructor.	LEC 1.0 1.0 1.0
ICE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: None.	LAB 1.0 1.0 0.0

ICE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: None.	LAB 2.0 2.0 0.0
ICE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: None.	LAB 3.0 3.0 0.0
IEC101	Basic Electricity	Electrical and first aid safety. Introduction to electricity, trade math, wiring techniques. Introduction to the National Electrical Code	Prerequisites: None.	LEC 5.0 5.0 5.0
IEC102	Electrical Residential	Series-parallel circuits, governing bodies, residential wiring practices, Kirchhoff's Law, kitchen outlets, heating systems, low voltage systems, service entrance requirements and swimming pools	Prerequisites: A grade of C or better in IEC101 or permission of Instructor.	LEC 5.0 5.0 5.0
IEC103	Electrical A/C and D/C	Trigonometric and vector math, alternating current theory, inductance and transformer theory. Three phase, generators and single and three phase motor theory	Prerequisites: A grade of C or better in IEC102 or permission of Instructor.	LEC 5.0 5.0 5.0
IEC104	Wiring Motors and Transformers	Sizes of wire, conduit and boxes; National Electric Code, sizing service and feeders, sizing transformers and protection of transformers	Prerequisites: A grade of C or better in IEC103 or permission of Instructor.	LEC 5.0 5.0 5.0

IEC105	Electric Blueprint Reading	Three-phase systems, transformers, and blueprint reading, construction process, plumbing, masonry and welding blueprints as well as mechanical systems; electrical blueprints and grounding.	Prerequisites: A grade of C or better in IEC104 or permission of Instructor.	L+L 5.0 5.0 5.0
IEC106	Electric Motor Controls	Motor Control system, alternating current (AC) and direct current (DC) contactors and magnetic motor starters; time delay circuits, reversing circuits, power distribution systems and hazardous locations, signs and fiber optics.	Prerequisites: A grade of C or better in IEC105 or permission of Instructor.	L+L 5.0 5.0 5.0
IEC107	Electronics and Controls	Electronic components, electromechanical and electronic relays. Photoelectric and proximity controls, logic- programmable controllers, reduce voltage starters, starting direct current motors, and interpretation of electronics components	Prerequisites: A grade of C or better in IEC106 or permission of Instructor.	LEC 5.0 5.0 5.0
IEC108	Alarm Systems and Codes	Fire and signaling systems. Installation and start-up of fire alarm systems, fire alarm maintenance and troubleshooting. Wiring methods and materials, circuits and equipment protection, motors and air conditioning circuits, transformers and generating. Dwelling occupancies, industrial and commercial locations, hazardous locations- swimming pool and leadership	Prerequisites: A grade of C or better in IEC107 or permission of Instructor.	LEC 5.0 5.0 5.0
IEC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

IEC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
IEC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
IFS105	Finding Health Information Online	Development of skills and competency in accessing, evaluating, and using online medical and health information resources	Prerequisites: None.	LEC 1.0 1.0 1.0
IFS110	Critical Research for College Success	Access, evaluate, and incorporate sources appropriately into academic projects.	Prerequisites: None.	LEC 1.0 1.0 1.0
IFS112	College Research Foundations	Development of research skills and competencies essential for college success including accessing, evaluating, and incorporating information sources into academic projects. Examination of information ecosystems, online presence, and the implications of one's information seeking behaviors.	Prerequisites: None.	LEC 3.0 3.0 3.0

IFS201	Information in a Post-Truth World	Development of critical thinking skills in using information. Exploration of how information can be used as a tool or a weapon. Explanation of the role of information as a consumer and creator. Recognition of the impact of culture and worldview on how information is understood, created, and disseminated.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3 3 3
IFS210	Information Without Borders: Research in a Global Society	A comparative study focused on access to digital information in a global environment. Explore the global culture developing around the Internet and the impact of local, national and global cultures as well as economic and social factors related to the flow of information in a global society. Examine emerging technologies to produce and distribute information across cultures in a global society in an ethical manner.	Prerequisites: None.	LEC 3.0 3.0 3.0
IFS213	Hacking and Open Source Culture	Focus on the multi-dimensions of hacking and open source culture, including rule-breaking, innovation, and creative use of programming/technology. Social, economic, cultural, and political implications of hacking and technology, in historical and contemporary contexts will be addressed.	Prerequisites: None.	LEC 3.0 3.0 3.0
IFS215	Cultural Context of Health Information	Examines impact of cultural diversity (ex: linguistic, religious, racial, ethnic, and gender groups) on health information seeking behavior and health literacy. Examines characteristics of culturally competent health information and provides information on how to locate high quality, culturally competent health information. Examines characteristics of low literacy health information and provides information on how to locate high quality, low literacy health information.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0

IGS290	Integrated Studies	Integrated nature of human experience. Critical inquiry of a particular theme from a wide variety of academic viewpoints. Synthesis of knowledge and skills. Evaluation of experience and decisions from ethical, aesthetic, and intellectual perspectives. Preparation of three formal papers.	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
IGS290AA	Integrated Studies	Integrated nature of human experience. Critical inquiry of a particular theme from a wide variety of academic viewpoints. Synthesis of knowledge and skills. Evaluation of experience and decisions from ethical, aesthetic, and intellectual perspectives. Preparation of two formal papers	Prerequisites: None.	LEC 2.0 2.0 2.0
IGS290AB	Integrated Studies	Preparation of a formal paper related to IGS290AA that demonstrates competency in gathering, interpreting and evaluating evidence.	Prerequisites: A grade of C or better in IGS290AA or Corequisites: IGS290AA.	LEC 1.0 1.0 1.0
IGS291	Studies in Global Awareness	Interdisciplinary examination of selected topics in global awareness. Study of the human organization and modern global interdependence. Selected topics vary	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
IGS291AA	Studies in Global Awareness	Interdisciplinary examination of selected topics in global awareness. Study of the human organization and modern global interdependence. Selected topics vary	Prerequisites: None.	LEC 1.0 1.0 1.0
IGS292	Studies in Cultural Diversity	Interdisciplinary examination of selected topics in cultural diversity. Study of the interrelationships among diverse cultures within the contemporary United States. Selected topics vary	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
IGS292AA	Studies in Cultural Diversity	Interdisciplinary examination of selected topics in cultural diversity. Study of the interrelationships among diverse cultures within the contemporary United States. Selected topics vary	Prerequisites: None.	LEC 1.0 1.0 1.0

IGS293	Studies in Historical Awareness	Interdisciplinary examination of selected topics in historical awareness. Study of the historical method and of human events that have created modern life. Selected topics vary.	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
IGS293AA	Studies in Historical Awareness	Interdisciplinary examination of selected topics in historical awareness. Study of the historical method and of human events that have created modern life. Selected topics vary	Prerequisites: None.	LEC 1.0 1.0 1.0
IGS294	Integrative Study of the Future	Integrative and interdisciplinary study of the future. Critical inquiry of the future from historical, philosophical, literary, scientific, social, psychological, and religious perspectives. Comprehensive review of contemporary scientific- technological, environmental, and global and cultural trends and possible directions in the future. Synthesis of theoretical knowledge and practical and personal applications	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
IMC101	Introduction to the Mechanical Trades	Uses of sheet metal fabrication. History and development of apprenticeship programs in the sheet metal trade. Obligations and general job-site safety	Prerequisites: None.	LEC 0.5 0.5 0.5
IMC111	Excavating and Piping in Trenches	Methods of trenching including types and angles of trenches. Also, trench support in accordance with OSHA(Occupational Safety and Health Administration). Laying of pipe and backfilling requirements	Prerequisites: None.	LEC 1.0 1.0 1.0
IMC112	Introduction to Mechanical Trades Construction	Theories and concepts for mechanical trades construction: Basic safety, materials handling and construction math. Application and maintenance of hand and power tools, and basic rigging. Types and interpretation of construction drawings. Introduction to basic communication and employability skills.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

IMC113	Cast Iron Pipe/Cleanouts/Traps and Interceptors	Joining cast iron pipe and related fittings. Installing traps and interceptors, fittings and cleanout requirements for drain, waste, and vent piping	Prerequisites: None.	LEC 1.0 1.0 1.0
IMC114	Overview of Mechanical Trades: Sheet Metal, Pipefitting, and Plumbing	Overview of the work performed in the mechanical trades. Theories and concepts of care, use, and safety procedures related to hand and power tools motorized equipment. Introductory concepts in construction drawings, safety hazards and installation of ductwork.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC120	Plumbing, Drain, and Waste Piping	Interpretation and grade requirements for drain piping. Planning, testing, and installation of specific types of drains.	Prerequisites: None.	L+L 5.0 5.0 5.0
IMC122	Multiple Trades Cross Training: Tubes, Fittings and Piping Systems	Principles of architectural sheet metal, copper tube and fittings, carbon steel pipe and fittings, mechanical piping systems, and plastic pipe and fittings. Introductory concepts of drain, waste and vent (DWV) systems, soldering for sheet metal and pipefitting power tools.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC124	Multiple Trades Cross Training: Standards	Fundamentals and theories of trade standards for sheet metal, plumbing systems, and mechanical piping systems installation.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC126	Plumbing Fixtures Installation Methods	Materials used in manufacturing plumbing fixtures. Calculating pipe diameter, structure and function of commonly used fixtures, and installation methods. Types and uses of valves and faucets	Prerequisites: None.	LEC 1.0 1.0 1.0
IMC137	Trade Math II	Trade math for the mechanical trade. Includes ratios and proportion, stretchout fillings, piping offsets, area and volume of geometric figures, measuring instruments, interpretation of tables and Pythagorean theorem	Prerequisites: None.	LEC 1.0 1.0 1.0



IMC140	Aboveground Piping	Materials storage, flanges, gaskets, and bolts, installation of pipe with flanged connections. Layout and installation of pipe sleeves and floor penetrations. Reading and interpreting spool sheets and erection of spools. Methods of determining field run specifications, rigging equipment, load weight for erection equipment, and support needs. Selection, assembly and installation of screw pipe, socket weld pipe, butt weld pipe, and vessel trim	Prerequisites: None.	LEC 1.0 1.0 1.0
IMC231	Mechanical Trades Construction: Plumbing Intermediate Principles and Concepts	Intermediate principles and concepts for the plumbing trade related to commercial drawings and calculations. Installation of fixtures, valves, faucets, roof, floor and area drain. Types of drains and fuel gas systems.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC233	Mechanical Trades Construction: Sheet Metal Intermediate Principles and Concepts	Intermediate principles and concepts for the sheet metal trade related to duct fabrication standards, air properties, bend allowances, field measuring, and triangulation.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC235	Mechanical Trades Construction: Pipefitting Intermediate Principles and Concepts	Intermediate principles and concepts for the pipefitting trade related to trade calculations, motorized equipment, above ground pipe installation. Emphasis on field routing, vessel trim, pipe hangers and support, testing systems and equipment.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC236	Mechanical Trades Construction: Plumbing Advanced Principles and Concepts	Advanced principles and concepts for the plumbing trade related to water supply piping installation, testing, and sizing. Application of advanced trade calculations and fundamentals of backflow prevention and types of venting.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

IMC237	Mechanical Trades Construction: Sheet Metal Advanced Principles and Concepts	Advanced principles and concepts for the sheet metal trade related to piping practices, radial line development, layout and fabrication. Emphasis on air systems, shop production and organization.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC238	Mechanical Trades Construction: Pipefitting Advanced Principles and Concepts	Advanced principles and concepts for the pipefitting trade relative to blueprint reading, drawing, and detail sheets. Advanced application of weld pipe fabrication, rigging, standards, and specifications.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC241	Mechanical Trades Construction: Plumbing Advanced Skill Building	Application and review of advanced principles for drain, waste and vent (DWV) systems, pumps, compressed air systems, and potable water treatment. Fundamentals of business practices for plumbers.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC243	Mechanical Trades Construction: Sheet Metal Advanced Skill Building	Application and review of advanced sheet metal layout, fabrication, and installation. Review principles of airflow, air distribution systems, standards, comprehensive planning and specification reading.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC245	Mechanical Trades Construction: Pipefitting Advanced Skill Building	Application and review of advanced principles and concepts for valve maintenance, hot taps, special piping, and pipe fabrication.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC246	Mechanical Trades Construction: Plumbing Advanced Applications and Techniques	Application and review of advanced plumbing techniques for water pressure boosters, recirculation systems, review and function of codes for indirect and special wastes and the plumbing industry. Introduction to hydronic and solar heating systems, servicing piping systems, fixtures and appliances. Team leadership skills.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

IMC247	Mechanical Trades Construction: Sheet Metal Advanced Applications and Techniques	Application and review of advanced sheet metal techniques for air testing and balancing. Review of codes and specifications pertaining to fume and exhaust system design including review and practice of lay out patterns, fabrication and selection of sheet metal fittings.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IMC248	Mechanical Trades Construction: Pipefitting Advanced Applications and Techniques	Application and review of advanced pipefitting techniques for advanced blueprint reading, steam systems, stress relieving and aligning. Purpose and function of in-line specialties and an introduction to supervisory roles.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	L+L 6.0 6.0 6.0
IND090	Basic Merchandising	General merchandising techniques specific to department stores. Includes organizational features, salesmanship and sales transaction methods, security and safety measures	Prerequisites: None.	LEC 1.0 1.0 1.0
IND091	Front End Cashiering	Basic front end cashiering techniques including cash register operations, identification of prices, receipt of payment, disbursement of change, bagging, and customer service. Also includes point of sale considerations such as customer relations, totalling purchases, safeguarding monies, company image, company policy and procedure, and state and federal regulations	Prerequisites: None.	LEC 1.0 1.0 1.0
IND110	Introduction to the Printing Industry	Brief history/introduction of graphic arts technologies including printing, photography, graphics and text. Safety and health practices, job estimating and trade customs as well as legal restrictions and requirements covered	Prerequisites: None.	LEC 1.0 1.0 1.0
IND111	Paper, Binding and Finishing Techniques	Finishing techniques and binding styles of paper. Covers paper properties, requirements, and grades. Various finishing and binding styles emphasized	Prerequisites: None.	L+L 3.0 4.0 4.0

IND112	Lithographic Inks and Offset Press Operations	Basic overview of lithographic inks and offset press operations. Sheet-fed and web-fed offset presses emphasized	Prerequisites: None.	L+L 2.0 3.0 3.0
IND121	Legal Research	Examines legal research and writing. State post-conviction relief, federal writs of habeas corpus and federal civil rights laws. Also includes state tort law, state and federal rules of civil procedures and administrative procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
IND133	Speaking in Business	Practical, effective speech techniques for everyday business interactions. Listening skills and stages of and barriers to the perception process. Examination of effective message preparation skills and communication styles and techniques. Interaction emphasizing conflict management and resolution in oral communication	Prerequisites: None.	LEC 3.0 3.0 3.0
IND133AA	Speaking in Business - Listening and Perception	Practical, effective speech techniques for everyday business interactions. Listening skills and stages of and barriers to the perception process	Prerequisites: None.	LEC 1.0 1.0 1.0
IND133AB	Speaking in Business - Delivering Communication Messages	Practical, effective speech techniques for everyday business interactions. Examination of effective message preparation skills and communication styles and techniques	Prerequisites: None.	LEC 1.0 1.0 1.0
IND133AC	Speaking in Business - Interaction Management	Practical, effective speech techniques for everyday business interactions. Interaction emphasizing conflict management and resolution in oral communication	Prerequisites: None.	LEC 1.0 1.0 1.0

IND134	Construction Core I	Causes, prevention and response for on-the-job accidents. Personnel protection for specific types of work place hazards. Prevention and response for electrical hazards and fire. Rigging equipment inspection and use. Lifting and moving equipment. Types of cranes and crane hand signals. Safety precautions for rigging and moving materials. Blueprint features and care. Safe and proper use of hand and power construction tools. Mathematical applications using English and metric units	Prerequisites: None.	LEC 3.0 3.0 3.0
IND135	Interpersonal Skills and Leadership in Construction	Values and expectations of the workforce, building relationships, satisfying stakeholders. Effective communication, management grid, creating a leadership environment. Behavioral interviewing and professional development of personnel.	Prerequisites: None.	LEC 1.0 1.0 1.0
IND136	Communications in Construction	Communication in the construction industry. Positive direct communication, written communication, active listening, understanding, negotiation, and dealing with difficult people. Communication skills at all organizational levels, with groups, combining oral and written communication for maximum effectiveness.	Prerequisites: None.	LEC 1.0 1.0 1.0
IND137	Issues and Resolutions	Negotiating techniques and tools, nonverbal signals, conflict resolution strategies. Symptoms and barriers to resolving problems, applying problem-solving techniques, brainstorming and root cause identification.	Prerequisites: None.	LEC 1.0 1.0 1.0

IND138	Introduction to Project Management and Resource Control	Technical and management skills such as preconstruction planning, cost and risk control and policy development. Criteria for project layout purchasing, subcontractor management, project layout. Preparation process for project start up, close out and alternate project delivery methods. Major factors which affect production control and production control standards. Project manager's role.	Prerequisites: None.	LEC 1.0 1.0 1.0
IND139	Construction Documents	Importance and types of documents, drawings and specifications. Methods of obtaining work in the industry and types of contracts and insurance requirements. Change order process and close out documents.	Prerequisites: None.	LEC 1.0 1.0 1.0
IND140	Construction Scheduling and Time Management	Fundamental training in scheduling, including listing and sequencing, bar charts, network diagrams and methods of managing resources. Importance of formal schedules, job planning, and establishing priorities and alternative scheduling methods.	Prerequisites: None.	LEC 1.0 1.0 1.0
IND141	Estimating and Cost Control	Accurate estimating, estimating process and steps in development of estimate. Cost control methodology, cost analysis and project manager's role in controlling cost and tracking rework cost.	Prerequisites: None.	LEC 1.0 1.0 1.0

IND142	Construction Safety/Loss Prevention	Construction safety and loss prevention from the perspective of the construction superintendent. Includes communication and motivation for safety and loss prevention, project security and traffic control, and scheduling planning to prevent losses. Also includes loss prevention documents and inventories, assigning responsibility for safety and equipment maintenance, handling inclement weather and emergencies, and government regulations and inspections.	Prerequisites: None.	LEC 1.0 1.0 1.0
IND143	Construction Law	Construction law, including general legal relationships and the meaning of frequently used contract clauses; emphasis on the superintendent's role in documenting and negotiating for changes and claims on construction contracts	Prerequisites: None.	LEC 1.0 1.0 1.0
IND144	Improving Construction Productivity	Techniques for improving the productivity of construction projects including external factors influencing productivity, planning and communications as functions of a productive project, and the relationship of motivation and job satisfaction to productivity. Also presents techniques for evaluating methods improvement, including the use of time lapse photography and development of a methods improvement program, time management and delegating responsibility	Prerequisites: None.	LEC 1.0 1.0 1.0
IND145	Sustainable Construction Supervisor	Sustainable construction management and green building practices, Leadership in Energy and Environmental Design (LEED) rating system applied to oversight of projects and crews. Supervision of subcontractors and crews related to accumulation and importance of LEED points.	Prerequisites: None.	LEC 1.5 1.5 1.5

IND150	Construction Foreman	Examine the basic supervisory and leadership concepts and skills needed to manage a construction project. Includes basic theories of motivation, role of communications in construction project management, decision making process, planning and organizing, strategies, developing production schedules to control production, discussing accident prevention and loss control	Prerequisites: None.	LEC 2.0 2.0 2.0
IND151	Electrical Level I	Introduction to National Electric Code. Electrical safety. Hand bending, cutting and measuring of conduit. Installation and applications of specific fasteners. Basic concepts of electricity, alternating current flow and voltage. Operation of electrical test equipment to measure properties. Installation procedures for raceways, wireways and cable trays. Take and interpret readings from test equipment. Installation and use of specific conductors and cables. Interpretation of electrical diagrams. Select wiring devices and techniques for commercial, industrial, and residential wiring	Prerequisites: None.	LEC 4.5 4.5 4.5
IND170AA	Training for Business, Industry, and Government - AA	Customized one credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 1.0 1.0 1.0
IND170AB	Training for Business, Industry, and Government - AB	Customized two credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 2.0 2.0 2.0
IND170AC	Training for Business, Industry, and Government - AC	Customized three credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 3.0 3.0 3.0



IND170AD	Training for Business, Industry, and Government - AD	Customized two credit lecture/lab course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	L+L 2.0 4.0 4.0
IND170AE	Training for Business, Industry, and Government - AE	Customized three credit lecture/lab course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	L+L 3.0 5.0 5.0
IND170AF	Training for Business, Industry, and Government - AF	Customized four credit lecture/lab course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	L+L 4.0 6.0 6.0
IND170AG	Training for Business, Industry, and Government - AG	Customized one-half credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 0.5 0.5 0.5
IND170AH	Training for Business, Industry, and Government - AH	Customized four credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 4.0 4.0 4.0
IND170AI	Training for Business, Industry, and Government - AI	Customized five credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 5.0 5.0 5.0
IND170AJ	Training for Business, Industry, and Government - AJ	Customized one and one-half credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 1.5 1.5 1.5
IND170AK	Training for Business, Industry, and Government - AK	Customized two and one-half credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 2.5 2.5 2.5
IND170AL	Training for Business, Industry, and Government - AL	Customized three and one-half credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 3.5 3.5 3.5

IND170AM	Training for Business, Industry, and Government - AM	Customized four and one-half credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County.	Prerequisites: None.	LEC 4.5 4.5 4.5
IND170AN	Training for Business, Industry, and Government - AN	Customized one quarter credit lecture course to meet the immediate training needs of business, industry, and government within Maricopa County	Prerequisites: None.	LEC 0.25 0.25 0.25
IND170AO	Training for Business, Industry, and Government - AO	Customized one credit lecture/lab course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: None.	L+L 1.0 2.0 2.0
IND170AP	Training for Business, Industry, and Government - AP	Customized two credit lecture/lab course to meet the immediate training needs of business, industry, and government within Maricopa Country.	Prerequisites: None.	L+L 2.0 3.0 3.0
IND170AQ	Training for Business, Industry, and Government - AQ	Customized three credit lecture/lab course to meet the immediate training needs of business, industry, and government within Maricopa Country.	Prerequisites: None.	L+L 3.0 4.0 4.0
IND170AR	Training for Business, Industry, and Government - AR	Customized one credit lab course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: None.	LAB 1.0 2.0 2.0
IND170AS	Training for Business. Industry, and Government - AS	Customized 1.75 credit L+L course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: None.	L+L 1.75 1.75 1.75
IND170AT	Training for Business, Industry, and Government - AT	Customized 1.25 credit L+L course to meet immediate training needs of business, industry and government.	Prerequisites: None.	L+L 1.25 1.25 1.25
IND170AU	Training for Business, Industry, and Government-AU	Customized two credit lab course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: None.	LAB 2.0 6.0 6.0

IND170AV	Training for Business, Industry and Government-AV	Customized three credit lab course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: None.	LAB 3.0 9.0 9.0
IND170AW	Training for Business, Industry, and Government-AW	Customized one credit lab course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: To be specified.	LAB 1.0 3.0 3.0
IND170AX	Training for Business, Industry, and Government-AX	Customized twelve credit lecture course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: To be specified.	LEC 12.0 12.0 12.0
IND170BA	Training for Business, Industry, and Government-BA	Customized two credit lecture with zero credit laboratory course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: To be specified.	LEC 2.0 1.5 1.5 LAB 0.0 1.5 1.5
IND170BB	Training for Business, Industry, and Government-BB	Customized two credit lecture with zero credit laboratory course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: To be specified.	LEC 4.0 2.0 2.0 LAB 0.0 6.0 6.0
IND170BC	Training for Business, Industry, and Government-BC	Customized four credit lecture with zero laboratory course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: To be specified.	LEC 4.0 2.5 2.5 LAB 0.0 1.5 1.5
IND170BD	Training for Business, Industry, and Government-BD	Customized L+L 4.0 credits, 4.5 periods, 5.0 load course to meet immediate training needs of business, industry and government within Maricopa County.	Prerequisites: To be specified.	L+L 4.0 4.5 5.0
INS100	Insurance Industry Profession	Introduction to the insurance industry profession and environment. Includes identification of personal career goals, effective workplace behaviors and professionalism in the workplace in addition to strategies for problem solving and conflict management. Also covers the importance of integrity and ethical behavior in the insurance industry.	Prerequisites: None.	LEC 3.0 3.0 3.0

INS127	Automobile Insurance General Policy Services	Automobile insurance general policy services. Covers policy market and special policy status considerations, proof of insurance provision issues, and internal customer service operations. Includes web-based information management tool usage.	Prerequisites: None.	LEC 3.0 3.0 3.0
INS128	Automobile Insurance Policy Billing	An introduction to automobile insurance policy billing procedures. Includes policy coverages, billing inquiries, and payment processing. Emphasis on navigating billing systems and utilizing billing resources and tools.	Prerequisites: None.	L+L 2.0 4.0 4.0
INS129	Automobile Insurance Policy Changes	Automobile insurance policy changes procedures. Emphasis upon information associated with changing existing automobile insurance policy coverage. Covers policy issue and policy status change operations, driver and vehicle addition concerns, and policy cancellation. Includes title lien holder issues and model call flow identification.	Prerequisites: None.	L+L 3.0 4.0 4.0
INS130	Automobile Insurance Policy Coverage	Automobile insurance policy changes to coverage concerns. Emphasis on policy changes and additions, including effective date determination. Covers change of address, principle operator, vehicle replacement and deletion information, and expiring policy changes requirement information.	Prerequisites: None.	L+L 3.0 4.0 4.0
INS131	Automobile Insurance Policy Cancellation and Reinstatement	Automobile insurance policy cancellation and reinstatement procedures. Covers cancellation authority, cancel request escalation procedures, and cancelled policy premium refund or payment due determination. Includes policy rescission procedure information.	Prerequisites: None.	L+L 3.0 4.0 4.0

INS140	Review for the Property and Casualty Insurance Agent Licensing Exam	Preparation for the Property and Casualty Insurance Producer licensing exam required by the State of Arizona Department of Insurance for licensure as a Property/Casualty Insurance Agent. Covers the basic principles and legal parameters of property and casualty insurance including homeowners, auto, and business policies. Designed for students with no prior experience in the insurance field as well as those seeking to expand their licensing authority with the State of Arizona.	Prerequisites: None.	LEC 1.0 1.0 1.0
INS150	Introduction to Personal Lines Policies	Introduction to personal lines policies. Includes principles of insurance, contracts, and the role of regulation in the insurance industry. Covers various types of personal insurance including property, liability, dwelling, homeowner, and auto insurance in addition to procedures for rating a policy.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
INS151	Introduction to Commercial Property Policies	Introduction to commercial property policies. Includes principles of commercial property, business owner, and commercial insurance for businesses. Covers terminology, forms, and procedures for policy coverages, declarations, exclusions, and endorsements.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
INS155	Fire Product Procedures	Introduction to fire product procedures. Covers types of coverage, endorsements, discounts and eligibility in addition to fair access concerns. Also includes procedures for quoting watercraft and homeowner fire coverage and use of state-specific guidelines and procedures.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
INS200	Principles of Property and Liability Insurance	Basic principles of insurance. Introduction to insurance contracts. Overview of company functions and operations including ratemaking, underwriting, claims, adjusting, and marketing.	Prerequisites: None.	LEC 3.0 3.0 3.0

INS205	Personal Insurance	Analysis of personal loss exposures and personal insurance coverages including homeowner's, other dwelling coverages, personal liability, auto, life, health, and government programs.	Prerequisites: A grade of C or better in INS200 or permission of Instructor.	LEC 3.0 3.0 3.0
INS210	Commercial Insurance	Analysis of commercial coverages including property, business income, inland marine, ocean marine, crime, boiler, general liability, auto, and worker's compensation. Analysis of loss exposures and explanation of coverage parts.	Prerequisites: A grade of C or better in INS200 or permission of Instructor.	LEC 3.0 3.0 3.0
INS220	Claim Handling Principles and Practices	Introduction to the claim settlement process including skills for a claims adjuster/examiner. Covers structure of claim departments, handling claims, investigating claims, setting and maintaining loss reserves, and good faith claims. Communication and negotiating techniques are emphasized.	Prerequisites: A grade of C or better in INS100 and INS200.	LEC 3.0 3.0 3.0
INS225	Auto Claim Practices	Overview of auto accident claims. Covers procedures for resolving vehicle damage claims including Alternative Dispute Resolution (ADR). Also covers investigating losses, analyzing liability, and costs and benefits of litigation.	Prerequisites: A grade of C or better in INS220.	LEC 3.0 3.0 3.0
INS241	Risk in an Evolving World	Introduction to the risk management process and its role in identifying and managing exposure to loss. Process for establishing a framework for hazard identification and the use of analytical and technology tools to determine financial impact to business.	Prerequisites: A grade of C or better in INS210.	LEC 3.0 3.0 3.0

INS242	Holistically Assessing Risk	Examination of various risk identification and assessment techniques implemented by business to control potential loss exposures. Emphasis on understanding the impact of operational decisions and employee actions on losses and steps used to mitigate financial consequences. Detailed analysis of property, liability, management liability, cyber, and loss exposures as well as use of data analytics to manage risk assessment and control.	Prerequisites: A grade of C or better in INS241.	LEC 3.0 3.0 3.0
INS243	Successfully Treating Risk	Evaluation of risk financing techniques available to organizations to provide funds to pay for losses incurred. Overview of financial elements of insurance, self-insurance, captives, and non-insurance transfers. Examination of non-traditional methods of financing including reinsurance, derivatives, catastrophe bonds, and insurance linked securities and their implementation to reduce hazard risk and market and credit risks faced by companies.	Prerequisites: A grade of C or better in INS241.	LEC 3.0 3.0 3.0
INS290AA	Internship for Insurance Studies	Insurance work experience in industry. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 1.0
INS290AB	Internship for Insurance Studies	Insurance work experience in industry. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 2.0 2.0 2.0

INT100	Interior Design Drafting	Basic manual drafting techniques used in the interior design industry. Focus on industry standards of equipment use, lettering, line work, dimensioning, scaling, and annotation. Introduction and practice of industry-specific drawing types, including floor plans, elevations, sections, details, multi-view projection, and paraline. Brief exploration of hand sketching and Computer-Aided Design (CAD) techniques as they relate to manual drafting	Prerequisites: None.	L+L 3.0 6.0 6.0
INT105	Introduction to Interior Design	Overview of interior design and related professions, including the design process, elements and principles of design, and basic concepts of space planning and furniture layout. Development of design vocabulary relative to architectural details, furnishings, and finishes.	Prerequisites: None.	LEC 3.0 3.0 3.0
INT115	Historical Architecture and Furniture	Historical survey of the development of architecture, interiors, furniture, and decorative arts from antiquity to the Industrial Revolution.	Prerequisites: None.	LEC 3.0 3.0 3.0
INT120	Modern Architecture and Furniture	Survey of the development of architecture, interiors, furniture, and decorative arts from the Industrial Revolution to the present. Emphasis is on modern architects and designers.	Prerequisites: None.	LEC 3.0 3.0 3.0
INT122	Digital Visualization for Design	Introduction to raster based rendering techniques utilizing interior design and landscape drawings. Comparison of raster based rendering to vector based rendering and presentation techniques utilizing leading industry software such as Adobe Photoshop and Adobe Illustrator.	Prerequisites: None.	L+L 3.0 6.0 6.0



INT126	Sewing for the Home	Provides students systemic skills and knowledge to plan and construct draperies, shades, pillows, bedding and other home furnishings through instructional projects. Emphasizes techniques used in producing textile goods for the home.	Prerequisites: None.	LEC 3.0 3.0 3.0
INT140	Introduction to CAD for Interior Design	This class focuses on the development of two-dimensional and three-dimensional spatial development through the use of Computer-Aided Design (CAD), computer-aided design for interior design following American Institute of Architects (AIA) guidelines.	Prerequisites: None.	L+L 3.0 6.0 6.0
INT145	Drawing and Rendering	Development of basic freehand sketching and perspective drawing skills. Explores styles and techniques with emphasis on quick sketch and presentation type drawings as used by design professionals.	Prerequisites: None.	L+L 3.0 6.0 6.0
INT150	Color and Design	Introduction to the theory and application of color as related to the elements and principles of design. Light and its effect on color. Emphasis on the development of presentation skills for the field of interior design.	Prerequisites: None.	L+L 3.0 6.0 6.0
INT156	Furniture Upholstery I	Techniques of general furniture upholstery, operations of webbing, springing, stuffing, trimming, sewing and cushion making on approved student-selected projects.	Prerequisites: None.	L+L 3 5 5.0
INT157	Furniture Upholstery II	Application and use of modern materials and tools, button tufting, channel construction, and special trim effects.	Prerequisites: A grade of C or better in INT156 or permission of Department or Division.	L+L 3.0 5.0 5.0
INT158	Furniture Upholstery III	Advanced techniques in upholstering of furniture and other needle-trade items; time and money saving shortcuts in layout; fabric cutting and sewing.	Prerequisites: A grade of C or better in INT157 or permission of Department or Division.	L+L 3.0 5.0 5.0

INT159	Furniture Upholstery IV	Advanced techniques of furniture upholstery for students interested in entering the upholstery trade; modern production techniques for sewing; stuffing; and finishing; job estimating; equipment selection and maintenance.	Prerequisites: A grade of C or better in INT158.	L+L 3.0 5.0 5.0
INT160	Fabrics for Interiors	Study of the properties, design, and performance characteristics of interior fabrics. Psychological and cultural impact of textiles on the built environment. Role of the interior designer in working with textiles. Introduction to regulations and codes within the textile industry.	Prerequisites: None.	LEC 3.0 3.0 3.0
INT175	Custom Design	Custom design for interiors. Creative problem solving using design theory and process to the custom design of interiors. Emphasis on visualization of concepts through sketching, shop drawings, and basic specifications.	Prerequisites: A grade of C or better in INT105 and (ARC141 or INT140) and INT145 and INT200 or permission of Instructor.	L+L 3.0 6.0 6.0
INT190	Space Planning	Study of creative, critical, analytical and strategic thinking as it relates to human behavior and the built environment. Emphasis on design theory, process, and application. Considerations for space utilization including anthropometrics and ergonomics.	A grade of C or better required in all Prerequisites. Prerequisites: INT105. Prerequisites or Corequisites: ARC141 or INT140.	L+L 3.0 6.0 6.0
INT205	Residential Design	Use of design process to create design solutions for residential spaces. Functional and aesthetic analysis of interior components. Includes kitchen and bath design; residential furnishings, fixtures, and equipment (FF&E); and environmental considerations. Refinement of presentation skills.	Prerequisites: A grade of C or better in INT145, INT190, and INT200.	L+L 3.0 6.0 6.0

INT211	Interior Materials and Specifications	Properties, performance, maintenance, sustainability and general characteristics of interior finishes. Emphasis on selection, basic estimating, and writing specifications.	Prerequisites: A grade of C or better in ARC141, or INT140, or permission of Instructor. Corequisites: MAT140, or MAT141, or MAT142, or MAT146, or higher-level mathematics course.	L+L 3.0 6.0 6.0
INT215	Professional Practices	Marketing, business processes, and ethical issues in the interior design industry. Create materials for use in the profession including a portfolio, resume, and online presence. Includes hands-on experiences within the interior design field.	Prerequisites: A grade of C or better in INT190 or permission of Instructor.	L+L 3.0 6.0 6.0
INT225	History of Decorative Arts	Survey of historical art, furniture and interiors with an emphasis on decorative arts from various cultures.	Prerequisites: A grade of C or better in INT115 and INT120.	LEC 3.0 3.0 3.0
INT230	Presentation Techniques	Advanced freehand sketching and perspective drawing skills. Explores a variety of styles and techniques with emphasis on presentation type drawings and portfolio development techniques used by design professionals.	A grade of C or better required in all Prerequisites. Prerequisites: INT145 and (INT140 or ARC141). Prerequisites or Corequisites: INT200 or ARC142.	L+L 3.0 6.0 6.0
INT235	Universal Design	The study of innovative, strategic, problem-solving and crucial design principles as it pertains to the constructed surroundings and those using space. Prominence will be placed on Universal Design principles and how they relate to the design process and tasks to be performed within the environment. Emphasis on the creative execution through the application of universal design elements and principles.	Prerequisites: A grade of C or better in INT190 or permission of Instructor.	LEC 3.0 3.0 3.0
INT240	Kitchen and Bath Design	Exploration into the specific requirements associated with kitchen and bath design. Emphasis on the design process and computer-based tools for interior design.	Prerequisites: A grade of C or better in INT190 and (ARC141 or INT140).	L+L 3.0 6.0 6.0

INT245	Color Rendering	Development of color rendering techniques. Emphasis on producing two-dimensional and three-dimensional renderings utilizing various media	AAS Degree in Interior Design or permission of Department or Division.	L+L 3.0 6.0 6.0
INT250	Basic Revit	Basic skills required to complete architectural drawings with Revit software; simplified overview of the software program and operations gained through completing typical plan, elevation, sectional, and 3D views, using generic walls and related components.	Prerequisites: None. ARC141, or previous AutoCAD/industry experience recommended.	L+L 3.0 6.0 6.0
INT251	Sketchup I: Introduction to Sketchup	Provides students with introductory level instruction utilizing Sketchup rendering software for school and workplace applications. Addresses basic drawing/rendering commands, accessing external drawing files, and plotting through the creation of both three-dimensional schematic and rendered interior and exterior building views.	Prerequisites: None. Previous CAD experience recommended but not required.	L+L 3.0 6.0 6.0
INT255	Advanced Custom Design	Covers advanced custom design for interior designers. Uses creative problem solving, design theories, and the design process to visualize custom design elements such as interior materials, furnishings, and details, through three-dimensional digital technology and construction processes.	Prerequisites: A grade of C or better in ARC140, ARC250, ARC265, INT145, INT150, INT175, and INT190.	L+L 3.0 6.0 6.0
INT260	Interior Codes and Regulations	Study of interior building codes, regulations, and standards and their impact on the health, safety, and welfare of the public. Emphasis on occupancy classifications, means of egress, fire protection, finish/furniture standards and testing, and Americans with Disabilities Act Accessibility Guidelines (ADAAG). This course is an exploration of codes and regulations as it pertains to the application of interior design projects.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: INT140 or ARC141 or permission of Program Director.	LEC 3.0 3.0 3.0

INT265	Building Systems	Study of building systems and their impact on the health, safety and welfare of the public	AAS Degree in Interior Design or permission of Department or Division.	LEC 3.0 3.0 3.0
INT266	Current Topics in Interior Design	Presentation of current topics related to the interior design industry. Emphasis on practical applications of historical, technical, business, social, or creative aspects of the field. Includes demonstration or in-depth description and may involve hands-on experience.	Prerequisites: Permission of Program Director.	L+L 1.0 2.0 2.0
INT268	Lighting Design	Study of interior lighting design and its impact on the health, safety and welfare of the public	AAS Degree in Interior Design or permission of Department or Division.	L+L 3.0 6.0 6.0
INT270	Commercial Design	Creation of design solutions for commercial spaces. Focuses on issues affecting the health, safety and welfare of the public	AAS Degree in Interior Design or permission of Instructor.	L+L 3.0 6.0 6.0
INT271AA	Interior Design Internship	Interior design work experience in the interiors industry. Required to work 80 hours. Supervised and evaluated by a faculty coordinator.	Prerequisites: Permission of Department or Division.	LAB 1.0 5.0 0.0
INT271AB	Interior Design Internship	Interior design work experience in the interiors industry. Required to work 160 hours. Supervised and evaluated by a faculty coordinator.	Prerequisites: Permission of Department or Division.	LAB 2.0 10.0 0.0
INT271AC	Interior Design Internship	Interior design work experience in the interiors industry. Required to work 240 hours. Supervised and evaluated by a faculty coordinator	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 0.0
INT274AA	Interior Design Study Tour	A tour of the interior design industry outside of the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance knowledge about this multi-faceted career	Prerequisites: Permission of Department or Division.	LAB 1.0 5.0 1.0
INT274AB	Interior Design Study Tour	A tour of the interior design industry outside of the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance knowledge about this multi-faceted career	Prerequisites: Permission of Department or Division.	LAB 2.0 10.0 2.0

INT274AC	Interior Design Study Tour	A tour of the interior design industry outside of the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance knowledge about this multi-faceted career	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 3.0
INT282AA	Service-Learning Experience in Interior Design	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
INT282AB	Service-Learning Experience in Interior Design	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
INT282AC	Service-Learning Experience in Interior Design	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
INT285	Design Portfolio Development	Design, produce, and present a professional portfolio appropriate to the field of Interior Design. Includes material selection and techniques, customer focus, contents and organization, presentation formats, and presentation boards to represent a variety of technical and aesthetic areas of design.	Prerequisites: A grade of C or better in INT240 or permission of Program Director.	LAB 1.0 1.5 1.5
INT290	Advanced Commercial Design	Use of design process to create solutions for medium to large multi-story commercial interiors. Focuses on issues affecting the health, safety, and welfare of the public	Prerequisites: A grade of C or better in INT270.	L+L 3.0 6.0 6.0
INT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

INT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
INT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
INT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

INT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
INT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
INT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0



IPH101	Introduction to Public Health	Introduction to Public Health introduces students to the broad discipline of public health and how it influences community and individual health status. Includes sciences of public health, historical context of public health, role of various public health agencies, core functions, methods of measurement and evaluation, major public health issues in the United States, public policy, and factors that contribute to individual and community health.	Prerequisites: None.	LEC 3.0 3.0 3.0
IPH105	Introduction to Patient Navigation	Basic concepts of patient navigation including disease prevention and community health, health insurance navigation, as well as accessing and analyzing health information. Training in assisting individuals with limited health literacy to access the maximum array of benefits from community services, clinical care, and health insurance.	Prerequisites: None.	LEC 3.0 3.0 3.0
IPH110	Principles of Health and Behavior Change	Introduction to the social and behavioral science theories used in public health. Provides an overview of health promotion principles and various theories and models developed to change health behavior and promote the health of individuals and societies.	Prerequisites: None.	LEC 3.0 3.0 3.0
IPH111	Public Health Across the Lifespan	Introduction to evidence-based research of trends and developments in health throughout the lifespan, dealing with the prenatal period through advanced age. Training in the individual, social, and environmental factors to determine and address health status and health inequities across the lifespan and in public health interventions such as education, policy, and environmental changes.	Prerequisites: None.	LEC 3.0 3.0 3.0

IPH112	Community-Based Health Education in Health and Illness	Provides the student with a basic understanding of the application of public health principles to community-based health education interventions. Includes an overview of public health, factors impacting health, health education theories and ethical considerations, the community needs assessment process, the program planning process, health communication, interventions at both the individual and population level.	Prerequisites: None.	LEC 3.0 3.0 3.0
IPH115	Introduction to Health Administration and the U.S. Health System	Introduction to the U.S. health care delivery system including knowledge and skills needed to navigate health care within a health care organization.	Prerequisites: None.	LEC 3.0 3.0 3.0
IPH201	Introduction to Epidemiology	Introduction to epidemiology and its role in public health. Training in the application of epidemiologic concepts and methods such as disease causation, terminology, and control principles relating to the spread, prevention, and control of communicable diseases and principles and practices of field investigation.	Prerequisites: A grade of C or better in (MAT206 or PSY230).	LEC 3.0 3.0 3.0
IPH205	Chronic Disease Management	Focuses on the prevention and management of chronic disease as a critical priority for health systems around the world. Provides participants with an overview of prevention and management of chronic disease in community settings. Develops practical skills in analyzing and evaluating approaches to chronic disease in a variety of settings. Helps to identify capacities and opportunities for change.	Prerequisites: None.	LEC 2.0 1.0 1.3

IPH220	Introduction to Mobile Integrated Health Care	Students learn components of patient-centered health care defined specifically for needs of the community. Training in determinants of health, health status indicators, cultural competence, health disparities, and bridging the gap of patient health care needs with social service resources and referrals. Additional topics include legal and ethical issues of mobile care, health care information technology, and insurance and reimbursement programs.	Prerequisites: None.	LEC 3.0 3.0 3.0
IPH275	Patient Navigator Practicum	Provides students with hands-on experience in the role of the patient navigator professional in the public health field, including guiding patients through various types of health care situations.	Prerequisites: A grade of C or better in [COM270, FON241, (HCR230 or HES210), HTM150, IPH101, IPH105, and IPH201] or permission of Instructor.	LAB 3.0 15.0 15.0
IPH280	Health Education Practicum	Provides students with hands-on experience in the role of the health educator professional in the public health field, including assessing health education needs and developing and delivering health education programs.	Prerequisites: A grade of C or better in [COM270, FON241, (HCR230 or HES210), HTM150, IPH101, IPH110, IPH111, IPH112, and IPH201] or permission of Instructor.	LAB 3.0 15.0 15.0
IPH285	Health Administration Practicum	Provides students with hands-on experience in the role of the health administrator professional in the public health field, including applying managerial functions within a health care agency.	Prerequisites: A grade of C or better in [(HCR230 or HES210), HSM222, HTM150, IPH101, IPH115, and IPH201] or permission of Instructor.	LAB 3.0 15.0 15.0
IPH290	Mobile Integrated Health Practicum	Provides students with hands-on experience in the role of the mobile integrated health professional in the public health field, including using evidence-based health care interventions and guiding patients through health care payment systems.	Prerequisites: A grade of C or better in [COM270, FON241, (HCR230 or HES210), HTM150, IPH101, IPH201, and IPH220] or permission of Instructor.	LAB 3.0 15.0 11.4

IPP198	Careers in Deaf Studies: Observation	Provides experience through observation to the world of work of a professional interpreter. Observation of professional interpreters in a variety of work settings, including but not limited to professional principles, standards and ethics applied to everyday interpreting settings.	Prerequisites: A grade of C or better in IPP205 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 1.0 1.0 1.0
IPP205	Introduction to Interpreting	Theories of role, function, responsibilities, and communication strategies of the American Sign Language (ASL)/English interpreter. Covers application and implementation of the National Registry of Interpreters for the Deaf (R.I.D.) and National Association of the Deaf (N.A.D.) Code of Professional Conduct. Additional topics addressed include interpreters functioning as advocates, moral systems vs. ethical systems, standard business practices, and perceptions of consumers.	Prerequisites: A grade of C or better in ASL201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
IPP207	Ethics and Decision Making for ASL/English Interpreters	Guided exploration of factors that impact decisions within interpreted contexts, including strategies, theory, and models for decision making. Application and implementation of the National Association of the Deaf (N.A.D.)-Registry of Interpreters for the Deaf (R.I.D.) Code of Professional Conduct.	A grade of C or better required in all Prerequisites. Prerequisites: ASL201 or permission of Department or Division. Prerequisites or Corequisites: IPP205 or permission of Program Director. Completion of prerequisites within the last three years is required.	LEC 2.0 2.0 2.0
IPP208	Advanced American Sign Language Discourse	Advanced study of terminology and discourse in various fields such as medical, judicial, technological, as well as financial and business transactions. Use of specialized terminology/concepts in dialogues, discussions, and narratives. Advanced use of classifiers, structuring of space, and grammatical features of American Sign Language (ASL)	Prerequisites: A grade of B or better in ASL203. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0

IPP209	Introduction to Educational Interpreting	Principles, vocabulary, and techniques used specifically in educational (K-12) interpreting and transliterating. Introduces students to the scope of work and issues in primary, secondary, and vocational educational settings. Covers sign systems, technical signs, and appropriate methods of incorporating new signs.	Prerequisites: A grade of B or better in IPP205 or permission of Department or Division. ASL200 recommended.	LEC 2.0 2.0 2.0
IPP210	Research in Interpreting	Overview of theory and methodological practice in Interpretation with particular attention to research methods. Emphasis on development of critical thinking skills through active participation in the research process.	Prerequisites: A grade of C or better in COM225, CRE101, ENG102, and IPP207.	LEC 3.0 3.0 3.0
IPP211	Preparation for Interpreting	Development of pre-interpreting skills, cognitive processing and analysis of interpreting process theories. Pre-interpreting skills include memory, cloze, identifying meaning, paraphrasing and summarization. Source language analysis and target language equivalents emphasized. Analysis of texts and contexts of monologues.	Prerequisites: Acceptance into the Interpreter Preparation Program or permission of Department or Division.	L+L 1.0 2.0 2.0
IPP215	ASL to English Consecutive Interpreting	Sequential development of consecutive interpreting skills from American Sign Language (ASL) to English. Source language analysis and target language equivalents emphasized. Analysis of texts and contexts of naturally occurring monologues, guidance for discovering personal filters, practice of skills, techniques for self and peer evaluations, and application of theoretical models.	Prerequisites: (Acceptance into the Interpreter Preparation Program or permission of Department or Division) and a grade of B or better in IPP211.	L+L 2.0 3.0 3.0

IPP216	ASL to English Simultaneous Interpreting	Sequential development of simultaneous interpreting skills from American Sign Language (ASL) to English. Source language analysis and target language equivalents emphasized. Analysis of texts and contexts of naturally occurring monologues from different genres with increasing length and difficulty, practice of skills, techniques for self and peer evaluations, and application of theoretical models.	Prerequisites: A grade of B or better in IPP215 or permission of Department or Division.	L+L 3.0 4.0 4.0
IPP218	English to ASL Consecutive Interpreting	Sequential development of consecutive interpreting skills from English to American Sign Language (ASL). Source language analysis and target language equivalents emphasized. Analysis of texts and contexts of naturally occurring monologues, guidance for discovering personal filters, practice of skills, techniques for self and peer evaluations, and application of theoretical models.	Prerequisites: (Acceptance into the Interpreter Preparation Program or permission of Department or Division) and a grade of B or better in IPP211. IPP215 suggested but not required.	L+L 2.0 3.0 3.0
IPP219	English to ASL Simultaneous Interpreting	Sequential development of simultaneous interpreting skills from English to American Sign Language (ASL). Source language analysis and target language equivalents emphasized. Analysis of texts and contexts of naturally occurring monologues from differing genres with increasing length and difficulty, practice of skills, techniques for self and peer evaluations, and application of theoretical models.	Prerequisites: A grade of B or better in IPP218 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 3.0 4.0 4.0

IPP220	Interactive Interpreting I	Sequential development of interactive interpreting skills from English to American Sign Language (ASL) and from ASL to English. Perform source language analysis, apply cognitive processing techniques, and produce target language equivalents. Analysis of texts and contexts of naturally occurring dialogues, practice of skills, techniques for self and peer evaluations, and application of theoretical models.	Prerequisites: A grade of B or better in IPP211 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 3.0 4.0 4.0
IPP221	Interactive Interpreting II	Continued development of interactive interpreting skills from English to American Sign Language (ASL) and from ASL to English. Perform source language analysis, apply cognitive processing techniques, and produce target language equivalents. Analysis of texts and contexts of naturally occurring dialogues, practice of skills, techniques for self and peer evaluations, and application of theoretical models.	A grade of B or better in IPP220, or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 3.0 4.0 4.0
IPP229	Interpreter Preparation Internship Seminar	Classroom portion of the Interpreter Preparation Program internship. Emphasizes the blend of job-related activities including career exploration, employment application procedures, interpersonal skills, and on-the-job problems.	Prerequisites: Acceptance into the Interpreter Preparation Program and/or program director approval. Corequisites: IPP230AA or IPP230AB.	LEC 1.0 1.0 0.0

IPP230AA	Interpreter Preparation Program Internship	Laboratory portion of the Interpreter Preparation Program seminar. Eighty (80) clock hours of work required. Practical experience in settings such as educational, rehabilitation, community service centers, and agencies serving children, adolescents, and/or adults who are deaf or hard of hearing. Designed to provide students with the opportunity to synthesize practical and academic experiences gained during the in-classroom portion of the program. Site, supervision, and plan of activity mutually agreed upon by the student and instructor. Capstone experience for AAS degree students.	Prerequisites: Acceptance into the Interpreter Preparation Program and/or program director approval. Corequisites: IPP229.	LAB 1.0 5.0 0.0
IPP230AB	Interpreter Preparation Program Internship	Laboratory portion of the Interpreter Preparation Program Seminar. One hundred sixty (160) clock hours of work required. Practical experience in settings such as educational, rehabilitation, community service centers, and agencies serving children, adolescents and/or adults who are deaf or hard of hearing. Designed to provide students with the opportunity to synthesize practical and academic experiences gained during the in-classroom portion of the program. Site, supervision, and plan of activity mutually agreed upon by the student and instructor. Capstone experience for AAS degree students.	Prerequisites: Acceptance into the Interpreter Preparation Program and/or Program Director approval. Corequisites: IPP229.	LAB 2.0 10.0 0.0
IPP242	Educational Interpreting Skills	Skill development and application of techniques used specifically in educational (K-12) interpreting and transliterating. Covers sign systems, technical signs, and methods of non-standard sign incorporation.	Prerequisites: A grade of B or better in (IPP209 and IPP211) or permission of Department or Division.	L+L 1.0 2.0 2.0



IPP250AA	Special Topics: Interpreter Preparation	Explores a special topic related to interpreter preparation. Topics vary and include concepts relevant to those pursuing career in (American Sign Language) ASL/English Interpreting and Transliterating	Acceptance into the Interpreter Preparation Program or permission of Program Director.	L+L 1.0 1.0 1.0
IPP250AB	Special Topics: Interpreter Preparation	Explores a special topic related to interpreter preparation. Topics vary and include concepts relevant to those pursuing career in (American Sign Language) ASL/English Interpreting and Transliterating	Acceptance into the Interpreter Preparation Program or permission of Program Director.	L+L 2.0 2.0 2.0
IPP250AC	Special Topics: Interpreter Preparation	Explores a special topic related to interpreter preparation. Topics vary and include concepts relevant to those pursuing career in (American Sign Language) ASL/English Interpreting and Transliterating	Acceptance into the Interpreter Preparation Program or permission of Program Director.	L+L 3.0 3.0 3.0
IPP250BA	Special Topics: Interpreter Preparation	Explores a special topic related to interpreter preparation. Topics vary and include concepts relevant to those pursuing a career in American Sign Language (ASL)/English Interpreting and Transliterating.	Prerequisites: Acceptance into the Interpreter Preparation Program or permission of Program Director.	L+L 0.5 0.5 0.5
IRW101	Ironworking: Orientation	Overview of the Ironworker labor history, green construction, work place issues and sexual harassment. Basic safety, measuring, tools and rigging. Types of ironwork and welding.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 3.0 3.0 3.0
IRW102	Safety and Health for Ironworking	Safety, health, and accident prevention in the construction work environment related to ironworking. Proper erection, use, and dismantling of scaffolds. Selection, inspection, and use of fall protection including safe operation of forklifts and First Aid/Automated External Defibrillator/Cardiopulmonary Resuscitation (First Aid/AED/CPR).	Prerequisites: Registered Apprentice status with the Ironworkers Apprenticeship and Training Program or permission of Apprenticeship Coordinator.	L+L 3.0 3.0 3.0

IRW103	Science, Rigging and Hoisting	Science and mechanics related to the plumbing trade. Properties of water and matter, hydraulic and pneumatic mechanics, metals and alloys. Corrosion. Rigging procedures including the use of fiber and wire rope for knots, hitches and slings. Use of hoisting equipment, and cranes. Hoisting with helicopters. Safe and proper loading and unloading of hoisting equipment. Intermediate fitting projects and mathematical applications	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 6.0 6.0 6.0
IRW104	Ironworking: Blueprint Reading	Basic elements of construction drawings including characteristics of various types of blueprints for ironworkers. Drawing interpretation, general abbreviations, acronyms, and basic symbols recognition and drawing classifications.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 1.5 1.5 1.5
IRW105	Ironworking III: History	Historical factors, events and activities leading to the founding of the International Ironworkers Labor Union. Circumstances and events between 1906-1912 related to labor unionization. Conspiracy trials involving unionization of Ironworkers, Carpenters, Machinists and the Building Trades. World War II and postwar struggles related to the labor movement. Factors of labor movement growth. The Occupational Health and Safety Administration (OSHA), nuclear power, foreign production of steel, and political influences relating to unionization in the 21st Century	Prerequisites: None.	LEC 3.0 3.0 3.0

IRW112	Lead Hazard Training	Background of lead and its uses including health effects caused by lead exposure. Occupational Safety and Health Administration (OSHA) regulations that apply to lead exposure, hazard communication and workers legal rights. Personal protective equipment (PPE) and work methods on steel structures. General site safety, work practices and confined space entry.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
IRW120	Structural Steel Erection I	History and manufacture of iron and steel. Tools, equipment, materials, and trade procedures. Safety precautions. ;Raising gang members, erecting columns, beams, girders, trusses, nets, and railings. Fastening components.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW121	Structural Steel Erection II	Tools, equipment and trade procedures. Advanced structural steel welding and burning. Mobile and tower cranes. Bolted, riveted and pinned connections. Bar joists, and bridging. Detailing stairways, ladders, channel bucks and grating.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW122	Cranes	Cause of fatalities. Load charts, wire rope, capacity, hook loads. Ground pressure, minimum and maximum clearances, list and trim. Floating cranes.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
IRW130	Reinforcing: Rebar	Reinforced concrete; manufacture of reinforcing steel; tools, ties, and safety; types of reinforcing used in building construction; bridge construction; purpose and location of reinforcing steel in concrete; fabricating, unloading, handling, and storing, reinforcing steel, reading engineering and placing drawings.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0

IRW131	Reinforcing: Post Tensioning Monostrand	Principles, theory, and terminology of post-tensioning. Stressing equipment, hand tools, document control. Installation of monostrand post-tensioned floor systems, tendons. Troubleshooting, encapsulated systems, barrier cables, slabs-on-ground, and field placement drawings.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW140	Post-Tensioning I	History of posttensioning; prestressing; advantages of posttensioning; post tensioning systems; anchors; placing drawings and supports; unloading, handling, and placing tendons, wire, and bars	Apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW141	Post-Tensioning II	Continuation of IRW140, Posttensioning I. Stressing of strand tendons and wire tendons, grouting of bonded tendons, bridges, nuclear containment vessels, and the threadbar posttensioning system.	Prerequisites: A grade of C or better in IRW140 and apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW142	Conveyors and Industrial Maintenance	History of conveyors, safety and tools. Overview and installation of overhead and floor conveyor systems. Bulk handling, conveyor drawings and maintenance procedures.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
IRW150	Rigging I	Rigging history, principles and blocks. Rigging safety. Fabric and wire rope, steal chain, sockets, slings, rigging hardware. Slicing techniques. Reeving systems and personnel requirements.	Apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW151	Rigging II	Safety rules and information for operation of rigging equipment; operation and assembly of cranes; examples of rigging jobs; use of helicopters in construction; miscellaneous rigging equipment; skids and rollers; access structures.	Prerequisites: A grade of C or better in IRW150 and apprentice status, or permission of the Apprenticeship Coordinator.	LEC 3.0 3.0 3.0

IRW160	Architectural Ironworking I	Curtain, window wall systems, skylights, storefronts, entranceways, cable walls, sealants, glazing, rails, doors, anchors and fasteners, stairs and ladders, catwalks, grating, fence and guardrails, detention systems, testing, installation and erection.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW161	Architectural Ironworking II	Introduction to layout, basic tools, mathematics, automatic levels, lasers, theodolites and transits including total station.	Prerequisites: A grade of C or better in IRW160 and registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 4.0 4.0
IRW175	Precast Concrete, Metal Buildings, and Scaffolding	Preconstruction planning including loading, method of transportation, timing, tolerances, safety, and quality control. Handling, erection and storage including hazards awareness. Use of cranes, hoists, and other specialized equipment. Pre-engineered metal building systems, site evaluation and preparation. Framing systems, insulation, walls, metal roofing, repairs and renovations. Basic components of scaffolding, loading, erecting and dismantling of scaffold systems.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
IRW296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

IRW296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
IRW296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
IRW296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

IRW298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
IRW298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
IRW298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

ISP105	Computer Information Systems	Overview of computer technology, concepts, terminology, and the role of computers in business and society. Discussion of social and ethical issues related to computers. Use of word processing, spreadsheet, database, and presentation software. Includes uses of application software and the internet for efficient and effective problem solving. Exploration of relevant emerging technologies.	Prerequisites: None.	52
ISP108B	Keyboarding II	This keyboarding skills course teaches students to use the computer keyboard to enter letters, numbers, and symbols. If students are already experienced typists, they will learn to type faster and more accurately (25 WPM @ 98% accuracy).	Prerequisites: None.	36
ISP110PC	Computer Usage and Applications	Introduction to business and personal computer operations and usage. Software applications for analyzing and solving business problems including word processing, spreadsheet, database, and presentation graphics.	Prerequisites: A grade of C or better is required in HMC200.	30
ISP116	Computer Foundations	Students learn computer concepts, how to navigate an operating system, control programs, manage files locally and in the "Cloud," and search the internet. Students will establish email habits necessary to accomplish workplace success. In addition, students will learn all the necessary applications needed for student success.	Prerequisites: None.	24
ITA101	Elementary Italian I	Introduction to basic grammar, pronunciation, and vocabulary of Italian. Development of speaking, listening, reading, and writing skills. Study of the Italian culture	Prerequisites: None.	LEC 4.0 4.0 4.0



ITA101AA	Elementary Italian I	Basic grammar, pronunciation and vocabulary of the Italian language. Includes the study of Italian culture. Practice of listening, speaking, reading and writing skills	Prerequisites: None.	L+L 4.0 5.0 5.0
ITA102	Elementary Italian II	Continued development of speaking, listening, reading, and writing skills in Italian. Study of Italian culture.	Prerequisites: A grade of C or better in ITA101 or ITA101AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
ITA102AA	Elementary Italian II	Continued study of grammar and vocabulary along with the study of Italian culture. Emphasis on speaking, reading and writing skills.	Prerequisites: A grade of C or better in ITA101 or ITA101AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 4.0 5.0 5.0
ITA115	Beginning Italian Conversation I	Conversational Italian. Basic sentence structure, pronunciation and vocabulary necessary to develop speaking ability in Italian. Designed for students seeking speaking and listening abilities with little emphasis on grammar	Prerequisites: None.	LEC 3.0 3.0 3.0
ITA116	Beginning Italian Conversation II	Continued development of speaking and listening skills for effective communication in Italian.	Prerequisites: A grade of C or better in ITA115 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ITA201	Intermediate Italian I	Review of essential grammar of the Italian language and study of the Italian Culture. Continued practice and development of reading, writing, and speaking skills.	Prerequisites: A grade of C or better in ITA102 or ITA102AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0

ITA202	Intermediate Italian II	Continued development of Italian language skills and continued study of the Italian culture.	Prerequisites: A grade of C or better in ITA201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
ITA225	Intermediate Italian Conversation I	Continued development of skills in conversational Italian for effective communication. A review of grammar and development of vocabulary. Intensified study of Italian life and culture.	Prerequisites: A grade of C or better in ITA102 or ITA102AA or ITA116 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ITA226	Intermediate Italian Conversation II	Continued development of skills in conversational Italian for effective communication. A review of grammar including the extensive use of grammatical concepts. Continued development of vocabulary. Intensified study of Italian life and culture.	Prerequisites: A grade of C or better in ITA201 or ITA225 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ITA265	Advanced Italian I	In-depth exploration of selected themes related to Italian culture. Involves reading selections from Italian literature, writing reports, and discussion in Italian. Emphasis on enhancing reading, writing and speaking skills.	Prerequisites: A grade of C or better in ITA202 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
ITA296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

ITA296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
ITA296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
ITA296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

ITA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ITA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
ITA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

ITD200	The Physical Child: Birth to Age Three	Examines the physical aspects of child growth and development in the first three years of life in the context of contemporary communities. Includes nutrition and feeding, health and safety, motor skills and exercise, neurological development, and identification of developmental delay.	Prerequisites: A grade of C or better in CFS/ECH176 or CFS235 or EED205.	LEC 3.0 3.0 3.0
ITD201	Attachment and Relationships	Explores the roots of human relationships in the attachment process. Considers how children become skilled at interaction with adults and peers in varied social contexts. Includes perspectives of Mahler, Erikson, and Magda Gerber	Prerequisites: None.	LEC 2.0 2.0 2.0
ITD202	Cognition and Communication	Examines how thinking emerges in the sensorimotor period and how language is acquired. Considers the role of people and environments in facilitating cognition, communication and language	Prerequisites: None.	LEC 2.0 2.0 2.0
ITD204	Supporting Family Development	Practical and professional ways to foster communication with family members and relationships within families of infants and toddlers. Considers sensitivity to contemporary family differences and respect for confidentiality	Prerequisites: None.	LEC 1.0 1.0 1.0
ITD210	Early Attachments, Relationships, and Families: Birth to Age Three	Explores the attachment process and relationships within families. Considers contemporary social contexts where children develop a concept of self, self-regulation, and interaction skills with children and adults. Examines social-emotional development, societal stresses, and supportive professional roles and responsibilities.	Prerequisites: A grade of C or better in CFS/ECH176 or CFS235 or EED205.	LEC 3.0 3.0 3.0

ITD220	Cognition and Communication: Birth to Age Three	Examines the cognitive development and language acquisition of infants and toddlers. Considers the role of people and daily environments on development. Also covers disabilities and developmental delays as well as major theories and research in the field.	Prerequisites: A grade of C or better in CFS/ECH176 or CFS235 or EED205.	LEC 3.0 3.0 3.0
ITH150	Survey of Contemporary Italy	An overview of modern Italian literary and artistic life from World War II to present; covers Italian cultural life and institutions, including political, social, and economic structures, and a comparison to American culture.	Prerequisites: None.	LEC 3.0 3.0 3.0
ITS100	Information Security Awareness	Computer and network security topics, including network communication. Includes security policy, implementation of basic security measures, the importance of backups and the value of protecting intellectual property. Real-life examples and practical projects to reinforce the need for computer security.	Prerequisites: None.	L+L 1.0 2.0 2.0
ITS110	Information Security Fundamentals	Fundamental concepts of information technology security. Topics include authentication methods, access control, cryptography, Public Key Infrastructure (PKI), network attack and defense methods, hardening of operating systems and network devices, securing remote access and wireless technologies and securing infrastructures and topologies. Emphasis on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) and security concepts and Microsoft (MS) Windows and Linux Administration.	Prerequisites: A grade of C or better in CIS126DL, or CIS126RH, or permission of Program Director. Corequisites: BPC270 or MST150++.	L+L 3.0 4.0 4.0

ITS120	Legal, Ethical and Regulatory Issues	Exploration of legal and ethical issues unique to information security. Analysis of professional ethical codes and their application to information security practitioners. Federal and state laws as they relate to information security	Prerequisites: A grade of C or better in ITS110 or permission of Instructor.	LEC 3.0 3.0 3.0
ITS130	Operating System Security	In-depth examination of operating system security including Transmission Control Protocol/ Data Encryption Standard (DES), Triple Data Encryption Standard (3DES), Advanced Encryption Standard (AES), Pretty Good Privacy (PGP), and other encryption technologies (TCP/IP), Internet Protocol Security (IPSec) and Cisco Internetwork Operating System (IOS), Microsoft Windows, Linux and Mac OSX Security. Procedures to defend networks against attacks and recovery from network disasters. Web server security. Emphasis on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) and security concepts and MS Windows and Linux Administration	Prerequisites: A grade of C or better in ITS110 or permission of Instructor.	L+L 3.0 4.0 4.0
ITS140	Network Security	Examination of techniques used to defend network security. Design and implementation of devices including firewalls and Intrusion Detection Systems (IDSs) and Virtual Private Networks (VPNs). Risk analysis and security policies methodologies. Emphasis on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) and security concepts and MS Windows and Linux Administration	Prerequisites: A grade of C or better in (ITS110 and ITS130) or permission of Instructor.	L+L 3.0 4.0 4.0

ITS240	Ethical Hacking and Network Defense	Preparation for the EC-Council Certified Ethical Hacking examination. In-depth exploration of how to effectively protect computer networks from risks ranging from malicious infiltration to cyber-warfare. Includes examination of ethical hacking, relevant tools and methodologies, and its importance to network security. Resources to identify new computer network vulnerabilities and counter security strategies will be discussed as well as an overview of relevant computer crime laws and penalties.	Prerequisites: A grade of C or better in ITS110 or CNT205 or CIS270 or CIS271DB or CIS272DB or permission of Instructor.	L+L 3.0 4.0 4.0
ITS291	Computer Forensics Foundations	Development of foundational computer forensic skills. Introduction to preserving, identifying, extracting, interpreting, and documenting computer data as part of a forensically sound analysis. Examination of the physical and logical structure of hard drives. Study of the logical structure of Windows-based file systems and common applications. Introduction to the logical structure of Unix/Linux-based file systems and common applications of commercial forensic tools	Prerequisites: A grade of C or better in BPC170 and ITS110 or permission of Instructor.	L+L 4.0 5.0 5.0
ITS292	Advanced Computer Forensics	Advanced computer forensics analysis techniques with commercial tools. Introduction to open-source forensic tools. Emphasis on data recovery from complex applications and media types. Study of the logical structure of Unix/Linux-based file systems. Advanced search techniques. Analysis of unallocated space, compound files, and NTFS artifacts	Prerequisites: A grade of C or better in ITS291 or permission of Instructor.	L+L 4.0 5.0 5.0



ITS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
JAS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
JAS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

JAS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
JCI110	METASYS: HVAC Mechanical Systems Operation	Design considerations and systems loads. Use of psychrometrics and psychrometric charts. Properties of air. Operation of heating, ventilation, and air conditioning (HVAC) systems and boilers. Use of heat exchange and heat recovery equipment. Refrigeration cycle, use of equipment, and components. Centrifugal pumps and hydronic systems. Air cleaning and treatment equipment. Humidifiers. Control systems and use of information management technology	Prerequisites: None.	LEC 3.0 3.0 3.0
JCI115	Fundamental Control Strategies for HVAC Systems	Heating, Ventilation and Air Conditioning (HVAC) environmental principles of temperature, humidity, air movement and purity. Conditioning and distribution of air, water, and steam. Components required for setpoints to establish building environmental standards. Control system fundamentals. Sensor types and applications. HVAC controller devices. Water and air distribution systems. Hydronic system configurations and components. Fan-coil AC systems	Prerequisites: None.	LEC 3.0 3.0 3.0

JCI120	HVAC Maintenance	Advantages of preventative HVAC(Heating, Ventilation and Air Conditioning) maintenance program. Major refrigeration components and their operation. Cleaning procedures for water and air cooled condensers tubes. Problem-solving with simulated heating and cooling situations. Maintenance and operation of compressors, air handlers, pumps, towers, piping, systems, and boilers. Electrical symbols and components. Troubleshooting of electrical problems and safety precautions	Prerequisites: None.	LEC 3.0 3.0 3.0
JCI121	HVAC Pneumatic Controls	Types of automatic control systems. Terminology, symbols and theories of electricity in heating, ventilation, and air conditioning (HVAC). Basic and supplemental control. Installation of pneumatic tubing. Supplemental pneumatic control devices. Electronic control equipment. Preventative maintenance and troubleshooting. Installation and calibration of single and dual controllers.	Prerequisites: A grade of C or better in JCI120 or permission of Instructor.	LEC 3.0 3.0 3.0
JCI123	Electric/Electronic Controls	Electrical fundamentals to include terminology, symbols and theory. Electrical circuits, controllers, and auxiliary devices. Temperature control for heating and cooling. Residential and commercial heating/cooling systems. Fuel burning equipment. Combustion, programming and electronic controls. Electronic control systems.	Prerequisites: A grade of C or better in JCI120 or permission of Instructor.	LEC 3.0 3.0 3.0
JCI126	Centrifugal Chiller Operation and Maintenance	Components and their purpose within the chilled water system. Life support systems. Operational guidelines and capacity control methods for centrifugal chillers. Auxiliary equipment. Preventative, predictive and proactive maintenance. Troubleshooting procedures.	Prerequisites: A grade of C or better in JCI120 or permission of Instructor.	LEC 2.5 2.5 2.5

JCI128	Testing, Adjusting and Balancing HVAC Systems	Properties, movement and measurement of air. Balancing air procedures. Calculate outside air mixtures and percentages. Air distribution systems. Hydronics and properties of water. Movement and measurement of water. Hydronic balancing. Evaluation based on psychrometric chart data	Prerequisites: None.	LEC 2.5 2.5 2.5
JCI129	Metasys: Boiler Operation and Maintenance	Types, standards, and principles of operation of steam boilers. High and low pressure boiler systems. Gauges, valves and accessories in boiler fittings. Steam and water accessory components. Fuel burning equipment for gas/oil boiler systems. Draft measurement and control. Combustion process. Gauges and measuring devices. Boiler water treatment. Hot water heating systems. Cooling systems. Boiler operations and safety.	Prerequisites: None.	LEC 3.0 3.0 3.0
JCI140	Variable Air Controllers	Purpose and applications of HVAC Pro for Windows. Software applications include operational and object blocks, compounds and strategy files, variable air volume (VAV) systems, and control strategies. Unitary controllers (UNT). Network control self test. Non volatile random access memory (RAM). Commissioning mode of WINPRO, air handling unit (AHU), UNT, and VAV. AHU static pressure loop. Troubleshooting	Prerequisites: None.	LEC 0.5 0.5 0.5
JCI190	Latitude Chiller: York Chiller Air Cooled Variable Driven Screw Compressor (YCAV)	Familiarization with theory, architecture, installation, wiring, commissioning, operation, maintenance, and troubleshooting of the YCAV chiller.	Prerequisites: None.	LEC 2.0 2.0 2.0

JCI201	METASYS: Extended Architectural Engineering	METASYS Extended Architecture information transformation and compatibility. Network Automation Engine (NAE); Network Integration Engine (NIE); Communication and Message Transmission. System Configuration Tool (SCT); Lon Works, and BAC net; Network Communication, International Standards Organization (ISO) and Open System Interconnection Reference Model (OSIRM). Simple Object Access Protocol (SOAP). Network design process, navigational hierarchy and archive database. Lab assignment and three-pump process	Prerequisites: None.	LEC 3.0 3.0 3.0
JCI218	Introduction to Energy Management	Principals of energy management. Energy codes and standards. Implementation of an energy program. Electrical lighting. Heating, ventilation and air conditioning, chillers, boilers, fans and pumps. Energy auditing, evaluation and conservation	Prerequisites: None.	LEC 1.0 1.0 1.0
JCI226	Pegasys: Cardkey Configuration and Setup	Pegasys system architecture and operations. Pegasys basics: installation, passwords, security, addressing and checks. Panel capacities, specifications, maintenance and diagnostics for 720 Field Panels. Workstation and software basics. Terminal and cardholder configurations. Software application and system options.	Prerequisites: None.	LEC 3.0 3.0 3.0

JCI234	Managing Indoor Air Quality	Characteristics, sources and health effects of indoor pollutants. Diagnosing indoor air quality (IAQ) problems. IAQ measurements and factors. Suppliers of data, equipment, and service. Heating Ventilation and Air Conditioning (HVAC) systems in relation to IAQ. IAQ problems and prevention. Codes and standards. Energy efficiency and IAQ. IAQ management. Economic factors education requirements, and legal implications of IAQ.	Prerequisites: None.	LEC 2.0 2.0 2.0
JCI248	HVAC Operations and Troubleshooting	Basic HVAC concepts and components. Gains, losses, loads, psychrometrics and heat calculations. Control loop installation, commissioning and service. Fan capacity, constant volume, variable volume. Advanced HVAC concepts. Equipment. Create a control loop in the lab. Ladder logic. Control strategies. air, water and boiler systems. Primary equipment in refrigeration units and cooling towers. Outside air, water and multi-zone specifications in troubleshooting a HVAC mechanical system	Prerequisites: None.	LEC 5.0 5.0 5.0
JCI250	Metasys: Facility Operations	Metasys(copyright) facility management system. Effective and efficient use of the features of Metasys to control facilities. Understanding of basic system configurations and operations. Interpretation of system messages and use of system features through Operator Workstation or Network Terminal. Terminology and acronyms	Prerequisites: None.	LEC 3.0 3.0 3.0

JCI252	Metasys: GPL Engineering	Specific acronyms for Metasys(copyright) GPL Engineering. Create GPL process compounds and strategy files. Utilize GPL object and operational blocks. Edit, translate and simulate compounds and strategy files. Uploading and downloading files using Windows	Prerequisites: A grade of C or better in JCI250 or permission of Instructor.	LEC 3.0 3.0 3.0
JCI253	Metasys: HVAC/ASC Engineering	Description of Application Specific Controllers (ASC) and their capabilities. Common applications, special features, specific strategies of ASC's. Air handling units and their related software. Operation and features of a zone terminal unit. HVAC(Heating Ventilation and Air Conditioning) systems strategies using various hardware/software. Installation and mounting of systems	Prerequisites: None.	LEC 3.0 3.0 3.0
JCI254	Metasys: Companion Workstation Operations	Day-to-day operations of a Companion(copyright) system. Computer and Companion terminology. Usage of Companion software features. Efficient use of system features to maximize the benefits of the Companion system	Prerequisites: None.	LEC 1.0 1.0 1.0
JCI255	Metasys: Network Administrator	User interface with Metasys. Passwords and display order. Data collection, storage and access of information. Destinations and secondary locations for data. Evaluation of system performance. Protection of database. Operator procedures. File management and transmission. Communication options and specialized displays. Customize software based on facility need.	Prerequisites: None.	LEC 3.0 3.0 3.0

JCI257	Metasys: Hardware Troubleshooting	Hardware in the Network Control Module (NCM). Workstation diagnostics. Self tests and RAM memory. Network control during loss of power. Installation and calibration of of the Digital Control Module (DCM) features. Troubleshooting procedures. Downloading of specific strategies for the Air Handling Unit (AHU). WINPRO functions for the Air Handling Unit (AHU), Unitary Control (UC), and Variable Air Volume (VAV) devices. Tuning Air Handling Unit static pressure loops	Prerequisites: None.	LEC 3.0 3.0 3.0
JCI261	Metasys: Database Management and Generation	Hardware and software applications within the Metasys(copyright) Database Tree Structure. Workstation set up. Global Database File use. Save and restore data. Window applications within the Metasys systems	Prerequisites: A grade of C or better in JCI250 or permission of Instructor.	LEC 3.0 3.0 3.0
JCI264	Metasys: DX-9100 Engineering	Equipment used in operation of DX-9100 controller. Use of the DX-9100 configuration tool. Front panel operations and features. Use of related hardware. Interpretation of digital output and data. Design and testing of four segment and boiler modules. Boiler discharge temperatures. Solve building control problems. Demonstrate and apply strategies for specific environmental situations	Prerequisites: None.	LEC 2.5 2.5 2.5
JCI267	METASYS: M-Graphics Development	Creation of graphic files using storyboarding techniques, and template files. Graphics development procedures, standard graphics, templates, and symbols. Visual assessment of graphics. Creation of animated graphics. Tagging graphics, import and export graphic files. Implementation of graphic files for specific workstations. M-Graphic drawings for Metasys facilities	Prerequisites: None.	LEC 3.0 3.0 3.0



JCI277	Metasys Networking	Troubleshooting and operational controls of function modules and diagnostic tools. Error analysis, configuration and testing devices. Specific calculations for cubic feet per minute, static control. Closed loop control of the Proportional Integral Derivative Loop (PIDL). Troubleshooting and operational controls of Graphic Programming Language (GPL) module and shared variables. Operational controls of Application Specific Control (ASC) commands and Control Systems (CS)	Prerequisites: None.	LEC 3.0 3.0 3.0
JCI290	N31 Engineering	Use and operation of the N31 Supervisory Controller. BACnet requirements, components, and functions. Applications of Project Builder. Site communications, alternate suppliers and Ethernet and M3 Workstation considerations	Prerequisites: None.	LEC 2.0 2.0 2.0
JCI291	Controller Configuration Tool (CCT): Advanced Programming	Modification of CCT standard solutions to meet customer requirements. Operations of Hybrid, Proportional, Integral and Differential control systems	Prerequisites: None.	LEC 3.0 3.0 3.0
JPN100	Introduction to Japanese	Brief introduction to the writing and speaking of Japanese. Emphasis on Japanese syllabic writing systems and foundational vocabulary.	Prerequisites: None.	LEC 1.0 1.0 1.0
JPN101	Elementary Japanese I	Basic grammar, pronunciation, and vocabulary of Japanese. Study of Japanese culture. Development of speaking, listening, reading and writing skills	Prerequisites: None.	L+L 5.0 6.0 6.0
JPN102	Elementary Japanese II	Continued study of basic grammar, pronunciation and vocabulary of Japanese. Study of the Japanese culture. Intensive practice in oral communication and development of reading and writing skills.	Prerequisites: A grade of C or better in JPN101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 6.0 6.0

JPN115	Beginning Japanese Conversation I	Conversational Japanese. Basic sentence structure, pronunciation, and vocabulary necessary to develop speaking ability in Japanese. Designed for students seeking speaking and listening abilities, with little emphasis on grammar, reading, or writing	Prerequisites: None.	LEC 3.0 3.0 3.0
JPN116	Beginning Japanese Conversation II	Continuation of conversational Japanese for survival in everyday business and social situations. Expansion of vocabulary and sentence structure through aural/oral practice. Practice in reading and writing Kana.	Prerequisites: A grade of C or better in JPN115. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
JPN201	Intermediate Japanese I	Expansion of sentence structures through oral/aural practice. Increased emphasis on reading and writing in Japanese and study of Japanese culture.	Prerequisites: A grade of C or better in JPN102 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 6.0 6.0
JPN202	Intermediate Japanese II	Extensive review of Japanese grammar; development of vocabulary and idiomatic expressions through reading and writing. Continued practice of oral communication skills and study of Japanese culture.	Prerequisites: A grade of C or better in JPN201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 6.0 6.0
JPN296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

JPN296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
JPN296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
JPN296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

JPN298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
JPN298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
JPN298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
JRN101	Professional Writing Fundamentals	Focus on the fundamentals and application of grammar, punctuation, spelling, style and structure necessary in professional writing fields, including media writing.	Prerequisites: A grade of C or better in ENG091 or eligibility for ENG101 as indicated by appropriate English placement.	LEC 1.0 2.0 2.0

JRN125	Photo Editing	Basic techniques of photo composition and editing for media reproduction. Teach how to crop and size photographs. Use of photo editing and design software in paginating a newspaper page on the computer. The effect and impact of color vs. black and white photographs. Basic techniques of photo essay, photo page and photo story and/or multimedia news products and the impact of photos on typography.	Prerequisites: None.	L+L 3.0 3.0 3.0
JRN133	Development of Small Publications	Design, plan and write newsletters, brochures, and advertisements. Desktop computer production and paste-up techniques.	Prerequisites: None. Computer experience and BPC138AA suggested but not required.	LEC 3.0 3.0 3.0
JRN201	News Writing	Writing and producing news for the media. Associated Press (AP) editing style, writing skills, and organizational structure for news.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
JRN203	Writing for Online Media	Writing using the modes and resources available on the Internet. Use of information and resources available on the Internet in writing, as well as writing for the Internet itself.	Prerequisites: Eligibility for ENG101 or ENG107 or permission of Instructor.	LEC 3.0 3.0 3.0
JRN205	Copyediting	Specific skills and techniques of copyediting. Understanding of editing skills to enhance a writer's abilities whether one's own or someone else's. Critically evaluate word usage and meaning to achieve the 3 Cs of writing clarity, completeness and conciseness.	Prerequisites: A grade of C or better in ENG101 or permission of Instructor.	L+L 3.0 3.0 3.0
JRN212	Broadcast Writing	Writing techniques for basic broadcast scripts: promotions, commercials, public service announcements, news leads, news stories, audio and video, sports, weather, traffic checks, five-minute newscasts, reports, using broadcast style rules.	Prerequisites: A grade of C or better in ENG101.	L+L 3.0 5.0 5.0

JRN215	News Production	Writing, editing, and publishing the student newspaper on multiple platforms. Emphasis may vary according to student goals.	Prerequisites: A grade of C or better in JRN201 or [(ENG101 or ENG107) and permission of Program Director or Instructor].	L+L 3.0 5.0 5.0
JRN225	Photojournalism	Reporting the news as a photojournalist, with emphasis on the development and creation of news photographs. Experience in shooting, editing and transmitting digital photos using professional photo editing and design software.	Prerequisites: None.	L+L 3.0 3.0 3.0
JRN231	Sports Writing	Writing sports stories for the print media. Composing at the computer keyboard. Associated press editing style, writing skills, and organizational structure for sports news.	Prerequisites: A grade of C or better in JRN201 or permission of Instructor.	L+L 3.0 3.0 3.0
JRN234	Feature Writing	Emphasis on crafting stylized human interest stories for publications. Includes research, interviewing, writing techniques, editing and professional concerns. Includes best practices for writing features for traditional and digital media.	Prerequisites: A grade of C or better in ENG101 or ENG107, or permission of Instructor.	L+L 3.0 3.0 3.0
JRN235	Practicum: Public Relations	On-campus public relations experience, including writing media releases, designing and producing promotional materials, planning events, script writing, and developing presentations	Prerequisites: A grade of C or better in BPC128 JRN133 JRN201 JRN215 MCO120 and MKT101.	L+L 3.0 5.0 0.0
JRN236	Advanced Practicum: Public Relations	Public relations experience integrating skills developed in previous courses. Students placed in community public relations job sites. This course incorporates writing media releases, designing and producing promotional materials, planning events, scriptwriting and developing presentations.	Prerequisites: Permission of Instructor.	L+L 3.0 5.0 5.0

JRN238	Business Journalism	Focus on reporting for and about business. Explores the nature and functions of business and the roles of business journalists. Examines the various media and situations within which business journalism operates.	Prerequisites: A grade of C or better in JRN201 and GBS151.	L+L 3.0 3.0 3.0
JRN240AA	Journalism Internship	Journalism work experience with a newspaper or other news organization. 80 hours of designated work per credit. Maximum of 6 credits allowed	Prerequisites: A grade of C or better in JRN215.	L+L 1.0 1.0 0.0
JRN240AB	Journalism Internship	Journalism work experience with a newspaper or other news organization. 80 hours of designated work per credit. Maximum of 6 credits allowed	Prerequisites: A grade of C or better in JRN215.	L+L 2.0 2.0 0.0
JRN240AC	Journalism Internship	Journalism work experience with a newspaper or other news organization. 80 hours of designated work per credit. Maximum of 6 credits allowed	Prerequisites: A grade of C or better in JRN215.	L+L 3.0 3.0 0.0
JRN290	Publications Portfolio	This course is organized around the development of a portfolio of published stories for submission to a jury of professional journalists, active and retired, that supports the district's occupational journalism certificate. Passing requires approval from two-thirds of the jury.	Prerequisites: None.	LAB 1.0 1.0 1.0
JRN296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

JRN296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
JRN296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
JRN296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0



JRN298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
JRN298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
JRN298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
JUD101	The Courts in Arizona	Comparative analysis of courts in Arizona and how they relate to each other, including the federal courts, the Arizona supreme court and court of appeals, juvenile courts, justice courts, municipal and town courts, and tribal courts	Prerequisites: None.	LEC 1.0 1.0 1.0

JUD103	Role of the Court Staff	Roles and responsibilities of court staff and other court personnel in Arizona	Prerequisites: None.	LEC 1.0 1.0 1.0
JUD107	Civil Procedure in Arizona Courts	Rules of civil procedure as applied to both standard civil actions and small claims cases found in Arizona limited jurisdiction courts. Conduct of the typical civil trials and small claims hearings, and pretrial procedures in managing a civil calendar	Prerequisites: None.	LEC 2.0 2.0 2.0
JUD109	Judicial Writing	Judicial writing skills, including research skills, organization, grammar, and style. Goals and objectives of writing in courts	Prerequisites: None.	LEC 1.0 1.0 1.0
JUD111	Sentencing Misdemeanants	Alternatives, methods, laws, rules and practices governing the sentencing of persons convicted of misdemeanors under Arizona law	Prerequisites: None.	LEC 1.0 1.0 1.0
JUD113	Court Management	Organization and management of courts with emphasis on problems relating to personnel issues, case processing standards, staff organization, quality management, and court administration. Management of fines, fees, bonds, and restitution	Prerequisites: None.	LEC 2.0 2.0 2.0
JUD115	Injunctive Actions	Injunctive actions (Orders of Protection and Injunctions Prohibiting Harassment), including philosophy and practical applications of the governing statutes and judicial responsibilities and limitations of powers as related to injunctive orders	Prerequisites: None.	LEC 2.0 2.0 2.0
JUD119	Alternative Dispute Resolution	Techniques for conflict resolution	Prerequisites: None.	LEC 1.0 1.0 1.0
JUD121	Appeals	Processing of appeals from limited jurisdiction to general jurisdiction courts	Prerequisites: None.	LEC 1.0 1.0 1.0
LAS100	The Paralegal Profession	Focus on the role, responsibilities, and ethical standards of a paralegal. Provides an overview of the legal system and the role of the paralegal in the legal system. Emphasis on professional development and job-search strategies	Prerequisites: None.	LEC 3.0 3.0 3.0

LAS101	Introduction to Law	Legal terminology and basic legal principles in the areas of tort, contract, and criminal law. Interrelationships among lawyers, the court system, and law enforcement and administrative agencies. Development of a case for trial, adjudication, and post-verdict procedures in the civil and criminal systems. Suggested but not required: ENG101 and CRE101, or exemption by score on the reading placement test (ASSET)	Prerequisites: None.	LEC 3.0 3.0 3.0
LAS109	Civil Procedures I	Pretrial procedural issues in both Arizona and the federal system. Emphasis on Arizona Rules of Civil Procedure 1-37, 41, 55, 56, and 72-76. Coverage of applicable time limits, filing requirements, and proficiency in locating appropriate provisions in the Arizona Rules of Civil Procedure. Drafting of pleadings and motions and the application of procedural rules pertinent to the early stages of civil litigation.	Prerequisites: Acceptance into the Paralegal Studies program. A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: LAS101 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS110	Civil Procedures II	Application of the procedural aspects of discovery, trial preparation, and post-trial work as part of a litigation team. Emphasis on practical concerns, such as interviewing of witnesses; preparation of discovery documents, exhibits, and transmittal memoranda; summarizing and indexing depositions; organization of files; preparation of trial notebooks; and participation in a mock trial.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0

LAS115	Criminal Trial Procedure	Procedural aspects of the criminal trial process in Arizona state courts from preliminary proceedings through trial. Emphasis on application of the rules of criminal procedure and preparation of common trial documents by paralegals. Documents include the charging instrument, pre-trial motions, and jury instructions.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS131	Legal Writing	The use of proper grammar, punctuation, and spelling in the construction of sentences and the development of paragraphs. Use of case briefs to study effective writing and analytical techniques. Analysis and application of the writing process to produce well-written documents commonly used in the practice of law.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS203	Ethics and Professional Practice	Rules of professional responsibility and ethical requirements with an emphasis on their application to legal assistants. Sources of power to regulate the practice of law. Issues related to unauthorized practice of law. Examination of professionalism in the legal profession	Prerequisites: A grade of C or better in LAS131 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS204	Contract Law	Examination of contracts and their regulation by the Uniform Commercial Code. Review and drafting of basic agreements.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS208	Probate	Emphasis on various ways in which property can be held and passed on. Requirements for valid wills and trusts. Steps involved in estate administration and appropriate forms to be used. Includes drafting basic wills and simple trusts.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0

LAS211	Legal Research	Use of print and electronic media to locate public documents, statutes, administrative regulations, and cases from county, state, and federal jurisdictions. Reading and interpreting research results. Shepardizing. Use of proper citation forms.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS212	Tort Law	Basic elements of negligence, strict liability, intentional torts; defenses; damages; insurance coverage. Evaluation of records and personal injury claims; review of insurance policies; settlement brochure; preparation of case intake memorandum	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS214	Business Organizations	Analysis and evaluation of business organizations with practical application of the law to analyze the utility, form, and function of Sole Proprietorships, General Partnerships, Limited Partnerships, Limited Liability Companies, and Corporations. Preparation of documents to create the most effective and feasible business organization under a given set of circumstances.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS217	Family Law	Legal analysis of marriage, dissolution of marriage, parental rights and duties; pleading and practice.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS220	Paralegal Internship Seminar	Coordinates on-the-job experiences with interpersonal relations, communications, time-management, and case-management skills. Provides opportunity to discuss problems encountered during internship.	Prerequisites: A grade of C or better in LAS203, LAS211, (LAS204 or LAS212), and (BPC110 or CIS105 or permission of Program Director). Corequisites: LAS221AB.	LEC 1 1 1

LAS221AB	Paralegal Internship	Field work through placement at a law firm or other law-related organization where student will gain experience working in a legal setting. Supervision and evaluation by on-the-job supervisor as well as college program director.	Prerequisites: Permission of Program Director. Corequisites: LAS220.	LAB 2 10 0
LAS225	Legal Research, Analysis, and Writing	Integration and further development of legal research and writing skills with an emphasis on critical thinking, issue analysis, and motion practice. Focus on integrating research, writing, and legal argument development.	Prerequisites: A grade of C or better in LAS131 and LAS211 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS229	Litigation Technologies	Use of presentation software; use of timekeeping, calendaring, and docketing software; use of litigation support software to organize case files; use of electronic trial presentation software in an electronic courtroom; ethical issues.	Prerequisites: A grade of C or better in LAS110 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS237	Civil Interviewing and Investigation	Foundations for interviewing and investigation. Questioning of clients, witnesses, and experts. Documenting and summarizing interviews. Factual investigation sources and techniques. Role of formal discovery (including E-discovery). Document analysis and preservation. Memorializing results of factual investigations.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS261	Bankruptcy	Examination of bankruptcy laws and procedures and the role of paralegals in bankruptcy practice, including the commencement of a case, preparation of common forms, review of bankruptcy litigation including contested matters and adversary proceedings, and debtors' and creditors' rights and obligations.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0

LAS265	Regulatory Compliance	Examination of, and requirements for, organizations maintaining compliance with regulatory schemes. Emphasis on federal regulations and the role of non-lawyer personnel, such as paralegals, in obtaining, organizing, analyzing, and presenting recommendations for acting on factual information and legal research related to regulatory requirements.	Prerequisites: A grade of C or better in LAS109 and (BPC110 or CIS105 or permission of Program Director).	LEC 3.0 3.0 3.0
LAS280	Paralegal Studies Portfolio Capstone	Demonstration of acquired skills and knowledge through review, revision, and supplementation of electronic portfolio containing evidence of program competencies; preparation, revision, and review of work product samples to facilitate the transition from student to entry-level paralegal.	A grade of C or better required in all Prerequisites. Prerequisites: LAS110, LAS203, LAS204, LAS214 and (BPC110 or CIS105 or permission of Program Director). Prerequisites or Corequisites: (LAS225, LAS229, and LAS237) or permission of Program Director.	LEC 1.0 1.0 0.0
LAS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

LAS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
LAS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
LAS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0



LAS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
LAS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
LAS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
LAT101	Elementary Latin I	Introduction to the basic grammar and vocabulary of the Latin language. Practice reading and translating Latin into English	Prerequisites: None.	LEC 4.0 4.0 4.0

LAT102	Elementary Latin II	Comparative study of English and Latin grammar. Emphasis on analytical thinking, memorization, and familiarization with new terminology. Translation from English and from original works in Latin.	Prerequisites: A grade of C or better in LAT101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
LAT201	Intermediate Latin I	Introduction to translation technics using selections from various authors; emphasis on use of primary texts.	Prerequisites: A grade of C or better in LAT102. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
LAT202	Intermediate Latin II	Refinement of translation technics using selections from Virgil's Aeneid; emphasis on use of language and meter.	Prerequisites: A grade of C or better in LAT201. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
LAT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
LAT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

LAT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
LAT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
LAT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

LAT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
LAT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
LBA155	Laboratory Assisting: Principles and Procedures	Overview of laboratory services, laboratory professionals, and the role of a laboratory assistant. Principles and procedures for pre-analytical processing of laboratory specimens. Performance of specimen processing, pre-analytical processes, and point-of-care testing. Application of quality assurance, quality control, quality management principles, infection control, and laboratory safety. Use of laboratory supplies, instrumentation, and information systems. Performing clerical and computer functions using medico-legal guidelines for documentation.	Prerequisites: (Acceptance into the Laboratory Assisting program), (a grade of C or better in HCC130, HCC145AA, PLB109, PLB111, and PLB122), and permission of Program Director.	L+L 5.0 5.0 5.0

LBA158	Laboratory Assisting Practicum	Practicum in laboratory assisting based in healthcare facilities or reference laboratories. Performance of clinical skills for pre-analytical processing of laboratory specimens, initial testing phases, and point-of-care testing using laboratory instrumentation, information systems, and supplies. Application of quality assurance, quality control, infection control, and laboratory safety. Performance of clerical and computer functions using medico-legal guidelines for documentation. Use of professional and ethical conduct in all interpersonal communications.	Prerequisites: A grade of C or better in LBA155 and permission of Program Director.	LAB 2.0 9.0 0.0
LDR100	The Leader in You	Introductory exploration and application of leadership theories, concepts and practices for college students that want to make a difference in a changing world. Provides the concept of the relational leadership model and how it differs from traditional leadership theories. Focus on self-development of leadership potential through completion of personal and leadership assessments, values exploration and leadership skill applications.	Prerequisites: None.	LEC 3.0 3.0 3.0
LDR101	Emerging Leaders I	Concepts and application of leadership skills and service learning to promote social change and value clarification. Development of organizational leadership skills through experiential learning	Prerequisites: None.	LEC 2.0 2.0 2.0
LDR102	Emerging Leaders II	Focus on implementing collaborative practices and organizational leadership skills to promote positive social change. Apply value-based leadership behavior in diverse settings	Prerequisites: A grade of C or better in LDR101 or permission of Instructor.	LEC 2.0 2.0 2.0

LDR103	Emerging Leaders Wilderness	Designed to expand leadership abilities through a wilderness experience. Focus on applying the Social Change Model of Leadership to an experiential environment. Focus on the development of individual and community elements	Prerequisites: None.	LEC 2.0 2.0 2.0
LDR201	Leadership Facilitation I	Designed to provide skills and practice for group facilitation of leadership activities in diverse settings Focus on development of organizational skills to promote effective group functioning	Prerequisites: A grade of C or better in LDR102 or permission of Instructor.	LEC 2.0 2.0 2.0
LDR202	Leadership Facilitation Practicum	Designed to build skills developed in Leadership Facilitation I. Focus on practical application of advanced facilitation skills in group and organizational settings.	Prerequisites: A grade of C or better in LDR201 or permission of Instructor.	L+L 2.0 2.0 2.0
LET100	Introduction to Law Enforcement Technology	Overview of law enforcement and administration of criminal justice system. Course outlines the criminal justice process from arrest to final disposition. Also includes the relationship between the branches of government and various components of the criminal justice system	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
LET102	Criminal Investigation	Overview of specialized techniques for the investigation of various types of crimes. Includes technology in police data processing operations as well as the nature and structure of various types of specialized crimes and crime groups. Also introduces techniques for interviewing and interrogation	Prerequisites: Permission of Department or Division.	LEC 4.0 4.0 4.0
LET106	Patrol Procedures	Overview of the types and purposes of police patrol; including vehicle patrol and routine patrol procedures, mediation, and management of crisis situations. Emphasis on citizen protection, crime prevention, and identification and apprehension of suspects	Prerequisites: None.	LEC 2.0 2.0 2.0

LET109	Criminal Law	Overview of the basic concepts and terminology of statutory law. Examination of some of the most frequently used sections	Prerequisites: None.	LEC 2.0 2.0 2.0
LET110	Fundamentals of Law Enforcement	Overview of law enforcement fundamentals and components of the criminal justice system. Covers various aspects of law enforcement including the history, management and supervision, ethics and professionalism, stress management as well as victimology, interpersonal communication, crime prevention and community policing issues	Prerequisites: None.	LEC 3.0 3.0 3.0
LET111	Tactical Driving	Overview of basic defensive driving techniques, dynamics of moving vehicles, the driving task, and driving a vehicle under hazardous conditions. Includes theory of high speed vehicle control while in pursuit, methods to successfully stop fleeing vehicles, psychological and physiological factors, liability issues, and methods for reducing the risks of pursuit.	Prerequisites: Permission of Department or Division.	L+L 2.0 4.0 4.0
LET112	Introduction to Juvenile Corrections	Introduction to the Arizona Department of Juvenile Corrections. Includes the philosophy, mission, vision, and goals of the department in addition to juvenile corrections statistics and jurisdiction issues. Also covers programs available to youth in the department as well as agency information policy and access. Standards of conduct also covered.	Prerequisites: None.	LEC 2.0 2.0 2.0

LET113	Juvenile Corrections Procedures	Practical application of juvenile corrections procedures. Includes workplace safety, first aid, and cardiopulmonary resuscitation (CPR) procedures in addition to principles of staff safety in the facility. Also covers physical intervention techniques, preparation and transportation of youth, and radio and telephone communications. Report writing also covered.	Prerequisites: None.	LAB 2.0 6.0 6.0
LET114	Juvenile Corrections Officer Skills	Officer skills for the juvenile corrections system. Includes cultural awareness, data security policy and procedures, and defensive driving skills. Also covers tools for and goals of behavior management and effective communication styles and skills. Contraband legalities and procedures also covered.	Prerequisites: None.	L+L 3.0 4.0 4.0
LET115	Crisis Intervention in Juvenile Corrections	Overview of juvenile corrections officer skills for crisis intervention. Includes phases of the stress model and situation assessment in addition to verbal and non-verbal crisis communication. Also covers behavioral support and conflict resolution goals and limitations. Life Space Interview (LSI) steps included.	Prerequisites: None.	LEC 2.0 2.0 2.0
LET116	Adolescent Treatment Issues	Adolescent treatment issues in the juvenile corrections system. Includes stages of adolescent development and development theories. Covers mental health issues and illness, disorders, and interventions in addition to types of treatments, medications, and behavioral issues.	Prerequisites: None.	LEC 3.0 3.0 3.0



LET117	Juvenile Corrections Supervision	Supervisory skills for the juvenile corrections system. Includes classification principles and systems, stages of change, and case management responsibilities. Also covers indicators of and reporting requirements for child abuse, Incident Command System (ICS) responsibilities, and education team roles and responsibilities. Positive Behavioral Interventions and Support (PBIS) also covered.	Prerequisites: None.	LEC 3.0 3.0 3.0
LET118	Legal Issues in Juvenile Corrections	Overview of legal issues in the Arizona Department of Juvenile Corrections (ADJC) system. Includes justice system treatment philosophies and theories as well as adjudication, conviction, and victim's rights. Also covers civil and criminal liability, causes of civil litigation, and civil rights concerns. Search and seizure, due process, and physical intervention principles also covered.	Prerequisites: None.	LEC 3.0 3.0 3.0
LET119	Community Relations	Includes media relations, child protective services, equal employment opportunity, the importance of ethics and professionalism for good community relations, and educating the community in the area of crime prevention.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
LET120	Juvenile Corrections Housing Unit Operations	Housing unit operations for juvenile corrections officers. Includes policies for housing unit operations, supervisory procedures, and documentation in addition to behavior management goals and techniques. Also covers levels of support, group management skills, and activation procedures for the Incident Command System (ICS).	Prerequisites: None.	L+L 2.0 3.0 3.0

LET125	Legal Aspects of Law Enforcement	Overview of the basic guidelines of the United States and state constitutions, focusing on those parts which deal with the rights of the individuals. Also covers laws of arrest, common civil and criminal liabilities experienced by law enforcement officers and agencies, the civil process, rules of evidence, and courtroom proceedings	Prerequisites: None.	LEC 2.0 2.0 2.0
LET127	Field Problems	Practical application of the knowledge and skills of police procedures needed to respond to various types of law enforcement problems. Emphasis on responding to simulated problem situations dealing with officer safety, interpersonal skills, problem solving, and paperwork.	Prerequisites: None.	L+L 2.0 4.0 4.0
LET130	Detention Officer Training	Introduction to the detention field. Includes officer responsibilities with regards to discipline, conduct and dealing with inmates in the legal system. Examination of detention services, management principles, philosophy and goals also covered. Constitutional Amendments, law enforcement ethics and corruption included.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
LET132	Introduction to Correctional Law	Introduction to the legal and constitutional rights of inmates. Pre-trial, sentencing, and probation processes covered. Court cases with regards to enforcement personnel and custodial agencies discussed. Also covers inmate discipline and types of force.	Prerequisites: A grade of C or better in LET130.	LEC 3.0 3.0 3.0
LET134	Special Needs Issues and Communication	Management skills for dealing with inmates with special needs. Issues related to female inmates, drug addictions, and mental disorders covered. Techniques for dealing with suicidal inmates and gang members included	Prerequisites: A grade of C or better in LET132.	LEC 2.0 2.0 2.0

LET135	Problem Solving and Crisis Management	Further examination of management techniques and tools within the detention facilities. Crisis intervention and de-escalation techniques covered. Also includes medical screening, inmate grievances, inmate disciplinary reports, and the reclassification system.	Prerequisites: A grade of C or better in LET134.	LEC 2.0 2.0 2.0
LET136	Detention Security Procedures	Security procedures within the detention facilities. Officer responsibilities with regards to contraband, facility security, and key/tool control. Procedures for conducting searches, security walks, headcounts, and the proper use of restraints. Dealing with hostage and emergency situations covered.	Prerequisites: A grade of C or better in LET135 or permission of Department or Division.	LEC 2.0 2.0 2.0
LET137	Public Safety Dispatcher: Basic	Designed to provide in-depth orientation and standardized training of public safety dispatchers within the law enforcement community and familiarize the student with the skills and information important to functioning in a competent, ethical, and professional manner.	Prerequisites: None.	LEC 5.0 5.0 5.0
LET138	Detention Officer Emergency Procedures	Techniques for managing emergency situations in the detention facility including fires and medical emergencies. Skills for administering first aid and cardiopulmonary resuscitation (CPR). Procedures for using control devices. Includes Occupational Safety and Health Administration (OSHA) safety equipment and methods as well as Sudden In-Custody Death (SICD) procedures.	Prerequisites: A grade of C or better in LET136.	Laboratory 1.0 3.0 3.0
LET139	Detention Facility Training	Daily procedures for managing the detention facility. Includes procedures for processing inmate needs and requests, completing departmental reports and crime scene management. Operational procedures and liability issues also covered.	Prerequisites: A grade of C or better in LET138.	L+L 2.0 4.0 4.0

LET141	Detention Defensive Tactics	Defensive tactics training for Detention Officers. Covers defensive body mechanics, various defensive techniques, handcuffing, and search techniques as well as pressure points and the carotid control technique. Ground defense and survival skills, survival psychology, and physical fitness also included.	Prerequisites: Permission of Department or Division.	L+L 4.0 5.0 5.0
LET143	Physical Conditioning and Wellness	Emphasis on developing physical fitness for the participants through mental and physical conditioning, structured exercise, and classroom education. Basic elements of strength training, aerobic conditioning, flexibility, and nutrition.	Prerequisites: Permission of Department or Division.	L+L 3.0 5.0 5.0
LET144	Detention Officer Field Training	Field training procedures for the detention facility officer. Includes officer communication, safety, and security as well as procedures for handling emergency situations in the detention facility. Also covers Order of Protection, Injunction against Harassment, and visitation responsibilities.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
LET145	Arrest/Defense Tactics	Proper use of lethal and non-lethal defensive tactics, techniques of stopping and approaching suspects in vehicles and on foot, and the custody and transportation of prisoners. Emphasis on basic safety and protection for both the officer and violator during initial contact, arrest, and transportation	Prerequisites: Permission of Department or Division.	LEC 5.0 5.0 5.0
LET146	Officer Survival	Overview of skills and techniques for officer survival. Tactical thinking, critical incident stress, entry techniques and emergency plans as well as basic high risk traffic stops and search warrants covered. Limitations of the mind and body in a crisis also covered	Prerequisites: None.	LEC 1.0 1.0 1.0

LET148	Detention Officer Field Training Lab	Application of field training procedures for the detention facility officer. Includes communication and documentation requirements as well as officer safety in the tower and on the floor. Also covers procedures for handling emergency situations and management of special populations within the detention facility.	Prerequisites: Permission of Department or Division.	L+L 3.0 9.0 9.0
LET150	Firearms I	Overview of firearms usage. Covers firearms safety and nomenclature, basic firearms usage techniques, and firearms care and cleaning.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
LET151	Firearms II	Practical application of firearms usage. Covers loading and unloading ammunition, firearm safety, daytime and nighttime firing techniques and shooting positions. Emphasis on qualification courses.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: LET150.	L+L 2.0 2.0 2.0
LET152	Tactical Weapons	Practical application of tactical weapons procedures. Emphasis on handgun and rifle techniques in addition to impact weapon targets, use of force, and taser operation. Includes techniques for engaging suspects, advanced simunitions, and high threat vehicle engagement.	Prerequisites: Permission of Department or Division.	L+L 4.0 6.0 6.0
LET155	General Instructor Certification	Designed to aid persons responsible for training in the workplace. Emphasis on motivating the adult learner, systematic training, planning, and evaluating performance	Prerequisites: None.	LEC 3.0 3.0 3.0
LET156	First Aid	First aid in a law enforcement environment, including impaired breathing, cardiac conditions, resuscitation, control of bleeding, movement of injured persons, shock, injury, and legal and civil issues associated with rendering emergency care	Prerequisites: None.	LEC 2.0 2.0 2.0

LET158	Fundamentals of First Aid Care for Law Enforcement	Fundamentals of first aid for the law enforcement officer. Includes the legal responsibility of the law enforcement officer in emergency situations, including tactical response considerations and documentation requirements. Covers identification and treatment of various injuries and illnesses including heart attack, stroke, and impaired breathing. Also covers procedures for performing cardiopulmonary resuscitation and use of the Automated External Defibrillator (AED).	Prerequisites: None.	LEC 2.0 2.0 2.0
LET160	Correctional System Ethics and Professionalism	Overview of policies and guidelines with respect to professionalism and ethics in the correctional system. Includes workforce diversity, staff-inmate relations, and harassment issues. Also covers the definition of ethics and the basis for ethical decision making	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
LET162	Introduction to Inmate Management	Effective inmate management techniques. Includes components of effective management and use of officer discretion. Criminal justice system also covered. Procedures for dealing with inmate discipline and classification, grievances, and use of force determinations.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
LET164	Correctional Information Systems	Overview of policies and guidelines for professional and effective distribution of information within the correctional system, including regulations governing two-way radio operation and use of a field notebook	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
LET166	Correction Officers Safety and Weapons Training	Basic shooting principles of the weapons used by correctional officers. Includes nomenclature, handling, loading and firing of the service handgun, shotgun, and 37mm gas gun. Lawful use of chemical agents including identification, coding, delivery and decontamination procedures.	Prerequisites: Permission of Department or Division.	L+L 2.0 4.0 4.0

LET167	Correctional Sergeant Leadership	Examination of leadership skills, duties and responsibilities, and procedures for sergeants in correctional facilities. Includes leading and creating an environment that motivates employees, effective communication, professionalism, and staffing/roster management procedures. Also covers procedures for the Incident Command System (ICS), Designated Area Response Team (DART), and performance evaluations for correctional employees.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
LET168	Inmate Security Procedures I	Procedures for dealing with inmate security. Includes progressive behavior control and protective custody. Inmate count, personal property inventory, mail handling procedures, and cell extraction procedures also covered.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
LET169	Inmate Security Procedures II	Security procedures for handling inmates. Covers searches, contraband, monitoring of inmates and perimeter checks. Transportation of inmates, use of restraints and driving skills including preventable collisions included.	Prerequisites: A grade of C or better in LET168 or Corequisites: LET168.	L+L 3.0 4.0 4.0
LET170	Security, Custody and Control Procedures	Procedures for maintaining security and control within a correctional institution. Includes custody levels, roles of staff, and essential components with regards to span-of-control. Also covers procedures for dealing with crime scene management, fires, and emergency situations.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
LET172	Conflict and Crisis Management	Conflict and crisis management techniques for correctional institutions. Effecting positive, non-forceful resolutions to potentially violent situations. Emphasis on officer and inmate safety	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0

LET173	Introduction to Leadership in Public Safety	Introduction to leadership in the field of public safety. Covers stages of adult human development, generational differences, and characteristics of effective leaders. Also includes characteristics of leaders, including values, ethics, attitudes, behavior, and response techniques in addition to identification of personal strengths and determination of a personal leadership style.	Prerequisites: None.	LEC 2.0 2.0 2.0
LET174	Organizational Culture and Leadership	Examination of organizational structure and its application to the field of public safety. Covers characteristics and principles of effective organizations, systems and process management, and phases of process building in addition to characteristics of a process enterprise. Also includes levels of leadership and characteristics, ethical considerations, restrictions, and best behaviors of each.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: LET173.	LEC 3.0 3.0 3.0
LET175	Public Safety Leadership Capstone	Completion and professional presentation of a formal staff study in the field of public safety, including steps for problem identification, research, and analyzing and reporting of information.	Prerequisites: A grade of C or better in LET174.	LAB 1.0 3.0 3.0
LET176	Medical and Mental Health	Responsibilities of the correctional system staff with regards to medical and mental health of inmates. Includes basic first aid, basic life support, and supervision and care for mentally ill and impaired inmates. Also includes drug and substance abuse and communicable disease control.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0



LET178	Physical Fitness and Self Defense Training	Physical and self defense training for correctional officers. Emphasis on aerobic power, muscular strength, endurance, and flexibility. Includes necessary and legal self defense along with techniques for protection of self and others in physical confrontations. Also includes training guidelines, safety issues and the benefits of good physical fitness.	Prerequisites: Permission of Department or Division.	L+L 3.0 5.0 5.0
LET179	Highway Patrol Procedures	Overview of operational and response procedures for highway patrol operations. Covers pursuits, roadblocks, emergency response, and high risk stops in addition to incident command systems. Also includes overview of racially biased policing, sex trafficking indicators, and marijuana field testing.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
LET180	Introduction to Computer Aided Dispatch	Introduction to computer aided dispatch. Covers techniques and procedures for emergency broadcast, including dispatch protocol, types of requests, and use of the dispatch panel. Also includes an overview of banking and vehicle security systems, the Incident Command System (ICS), and procedures for officer involved emergencies.	Prerequisites: None.	LEC 2.0 2.0 2.0
LET181	Emergency Communications Personnel	Duties and responsibilities of personnel within the emergency communications industry. Includes information operator and tactical dispatcher responsibilities for handling various types of calls including priority one, hot calls and pursuits. Also covers split configuration communication.	Prerequisites: None.	LEC 2.0 2.0 2.0

LET182	Emergency Communications Procedures	Practical application of emergency communications procedures. Includes dispatch functions, protocol and techniques, Incident Command system (ICS) implementation, and information officer and dispatcher responsibilities. In addition to basic dispatch procedures, covers queries, pursuits, priority one calls, hot calls, all calls, and high-risk situations and procedures. Radio dispatch card procedures also covered.	Prerequisites: None.	L+L 3.0 9.0 9.0
LET183	Transportation Law	Transportation law provisions. Covers Arizona Revised Statute (ARS) Title 28, drug transportation, and contraband as well as civil and criminal traffic laws. Traffic offenses, violation name, and classification included.	Permission of Department or Division.	LEC 1.0 1.0 1.0
LET184	Introduction to 911 Call Basics	Overview of basics for processing 911 calls. Covers communications terminology, abbreviations and codes as well as various police systems. Also includes location systems including numbering, point of origin, freeway structure, various maps and city codes.	Prerequisites: None.	LEC 3.0 3.0 3.0
LET185	911 Policies and Procedures	Policies and procedures for completing 911 calls. Includes the National Incident Management System (NIMS), Incident Command System (ICS) and the use of an incident action plan. Also covers the purpose and use of radio codes, the online crime reporting website, and call signs. Alarm call types, prioritization, reporting, and cancellation procedures also covered.	Prerequisites: None.	L+L 3.0 5.0 5.0

LET186	Specialized 911 Call Procedures	Procedures for managing specific emergency situations. Includes goals and procedures for handling barricaded suspect calls, active shooter situations and officer involved emergencies. Also covers Critical Incident Stress Management (CISM) resources and the impact of emotional labor.	Prerequisites: None.	L+L 3.0 5.0 5.0
LET190	Human Communications and Relations	Overview of human communications and human relations, with special emphasis on techniques used to overcome problems of communication. Covers various communication methods used in dealing with the community and techniques for handling crisis situations	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
LET195	Proficiency Skills for Fire Investigators	Proficiency skills required of the fire investigator. Includes physical conditioning and wellness as well as defensive tactics and vehicle operations.	Prerequisites: Permission of Department or Division.	L+L 2.0 4.0 4.0
LET196	Patrol Procedures for Fire Investigators	Patrol and off-duty responsibilities procedures for fire investigators. Includes domestic violence authority as well as priorities for handling crimes in progress. Also covers communication procedures and restrictions.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
LET197	Firearms for Fire Investigators	Firearms training for the fire investigator. Includes firearm safety and procedures, including daytime and nighttime firing techniques and shooting positions. Practical application in a field environment.	Prerequisites: Permission of Department or Division.	L+L 2.0 4.0 4.0
LET198	Criminal Investigations for Fire Investigators	Overview of procedures for conducting special criminal investigations. Responsibilities of the fire investigator with regard to death investigations, and assault and burglary cases. Also covers gangs and gang activity in addition to narcotics and dangerous drug investigations.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0

LET201	Physical Fitness Instructor Certification	Covers skills necessary to instruct and conduct physical fitness tests using the Cooper Institute for Aerobics Research standards and the Peace Officer Physical Aptitude Test (POPAT) standards. Also covers basics of human anatomy, strength training and aerobic conditioning as well as nutrition and prevention of injuries.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
LET202	Traffic Procedures	Overview of traffic procedures. Includes citations and warnings, traffic control, accident investigation, and dealing with impaired drivers	Prerequisites: None.	LEC 2.0 2.0 2.0
LET203	Report Writing	Overview of types and parts of reports. Includes elements of composition; characteristics of reports; substance; conclusions; statistics; accurate and complete descriptions of persons and property; and the importance of notes, their preservation, and final use	Prerequisites: None.	LEC 2.0 2.0 2.0
LET211	Criminalistics	Study of fingerprinting, crime scene processing, preliminary investigations, and crime scene management	Prerequisites: None.	LEC 2.0 2.0 2.0
LET223	Search and Seizure	Overview of statutes, constitutional requirements, and case law covering search and seizure. Includes procedures for obtaining and serving a search warrant, as well as, procedures for searching persons, premises, and vehicles	Prerequisites: None.	LEC 1.0 1.0 1.0
LET224	Crime Scene Investigations	Techniques for conducting a crime scene investigation. Includes crime scene documentation and artist sketching as well as the identification, preservation and collection of evidence Interviews and interrogations, information sources, and report preparation also covered	Prerequisites: None.	LEC 4.0 4.0 4.0

LET225	Criminal Investigations Certification	Police Detective Training. Emphasis on investigations, search and seizure, legal aspects of interview and interrogation, report writing, case management, and field problem scenarios.	Prerequisites: Must be a certified police officer or have permission of Department or Division.	LEC 6.0 6.0 6.0
LET225AA	Criminal Investigations Certification I	Overview of information, strategies, techniques, and resources available to detectives investigating property crimes, sex crimes, forged documents, and death investigations.	Prerequisites: Must be a certified police officer or have permission of Department or Division.	LEC 1.0 1.0 1.0
LET225AB	Criminal Investigations Certification II	Review of laws regarding search and seizure. Updated information regarding new laws as they apply to search and seizure.	Prerequisites: Must be a certified police officer or have permission of Department or Division.	LEC 1.0 1.0 1.0
LET225AC	Criminal Investigations Certification III	The legal framework for admissible confessions and other information gathered through interviews and interrogations. Prepares law enforcement personnel for obtaining confessions and other incriminating information from suspects used in court.	Prerequisites: Must be a certified police officer or have permission of Department or Division.	LEC 1.0 1.0 1.0
LET225AD	Criminal Investigations Certification IV	Emphasizes on necessity for good reports in criminal investigations. Characteristics of pre-report preparation, preparing the body of the report, and assembling the case report. Process of handling submission of a case report, processing turndowns, and furthers.	Prerequisites: Must be a certified police officer or have permission of Department or Division.	LEC 1.0 1.0 1.0
LET225AE	Criminal Investigations Certification V	Overview of the criminal investigators role in preparing case documents for submittal to the attorney and to prepare for trial.	Prerequisites: Must be a certified police officer or have permission of Department or Division.	LEC 0.5 0.5 0.5
LET225AF	Criminal Investigations Certification VI	Various types of electronic evidence and the procedures required to be submitted to the court for prosecution.	Prerequisites: Must be a certified police officer or have permission of Department or Division.	LEC 0.5 0.5 0.5

LET225AG	Criminal Investigations Certification VII	This course is a summative culmination of the investigator courses. Students will assume the investigator's role in a crime scene scenario, securing a crime scene, processing evidence, preparing documentation, and submit a case for trial.	Prerequisites: A grade of C or better in LET225AA, LET225AB, LET225AC, LET225AD, LET225AE, and LET225AF.	LEC 1.0 1.0 1.0
LET226	Arrest and Defense Tactics Instructor Training	Techniques for instructing students in arrest and defense tactics. Includes approaching suspects, use of equipment, and officer responsibilities as well as handcuffing and transporting prisoners. Use of force and liability issues, pressure points and impact weapons also covered. Close Quarter Crisis Management and psychological factors emphasized	Prerequisites: Permission of Department or Division.	LEC 6.0 6.0 6.0
LET229	High Risk Situations/Instructor Training	Techniques for instructing students in high risk/known risk situations. Includes pre-stop procedures, primary and back-up officer responsibilities, suspect removal, and vehicle positioning	Prerequisites: None.	LEC 2.0 2.0 2.0
LET241	Public Safety Report Writing	Overview of public safety report preparation and writing. Emphasis on critical thinking and communication skills. Field notes and report preparation steps as well as format and characteristics included. Also covers public safety report usage	Prerequisites: None.	LEC 3.0 3.0 3.0
LET243	Search Warrant Preparation	Overview of statutes, constitutional requirements, and case law covering searches, seizures, and detentions relative to the search warrant process. Includes procedures and tactical considerations for obtaining and serving search warrants. Also covers review and documentation of probable cause related to property, persons, and drug-related crimes within a search warrant affidavit as well as search warrant draft procedures.	Prerequisites: Must be a certified police officer or permission of Department or Division.	L+L 2.0 4.0 4.0

LET250	DUI Detection	Overview of alcohol-related DUI enforcement and general deterrence, DUI detection and description techniques, legal statutes, Standardized Field Sobriety Test (SFST's) procedures, DUI arrest process, report writing, courtroom testimony techniques and drug detention techniques.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
LET254	Criminal Investigations Detective I	Advanced training designed to prepare law enforcement officers for transition into investigator positions. Includes Criminal Investigations Division (CID) goals and expectations, the scouting mission techniques and resources, operational plan components and development, and a review of professional writing skills for report writing, in addition to procedures for surveillance. Also covers procedures for preparing and serving search warrants, handling digital evidence, and working human trafficking and smuggling cases.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
LET255	Criminal Investigations Detective II	Further advanced training designed to prepare law enforcement officers for transition into investigator positions. Includes Department of Public Safety (DPS) Criminal Investigations Division (CID) policies and procedures, the intelligence mission and cycle, crime scene management and processing, in addition to open source intelligence applications and resources. Also covers procedures for handling informants, interview and interrogation, and courtroom/trial preparation.	Prerequisites: A grade of C or better in LET254.	LEC 3.0 3.0 3.0
LET256	Law Enforcement Firearm Instructor	A train the trainer course for police firearm instructors. Covers instructional techniques for the pistol, revolver, and shotgun.	Prerequisites: AzPost (Peace Officer Standard and Training) Certified Police General Instructor or permission of Department or Division.	LEC 5.0 5.0 5.0

LET256AA	Law Enforcement Patrol Rifle Instructor	Techniques on proper manipulation and marksmanship skills needed by a patrol officer/deputy in the use of the patrol rifle, and techniques of teaching those skills to other officers/deputies.	Prerequisites: AzPOST (Peace Officer Standard and Training) certified law enforcement firearms instructor or permission of Instructor.	LEC 3.0 3.0 3.0
LET260	Traffic Accident Investigation	Overview of accident investigation techniques and reports. Physical evidence on the roadway and from the vehicle, human factors and reaction times, measurement and calculations emphasized. Also includes felony collision investigation.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
LET262	Active Shooter Procedures	Procedures for response and mitigation of active shooter/active homicide events. Includes policies for decision making, use of appropriate force, tactics for responding to active shooter events, basic structure clearing techniques, and Tactical Combat Casualty Care (TCCC) as well as opportunities for reality-based training.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
LET279AA	Field Training: Phase I	Introduction to the Field Training Program. Overview of standards for officers in training. Also includes vehicle inspection, traffic stops, writing citations, and field interview cards. Use of the radio and Mobil Data Terminal (MDT) covered. Integration of radio and MDT use while driving patrol emphasized.	Prerequisites: Permission of Department or Division.	L+L 4.0 4.0 4.0
LET279AB	Field Training: Phase II	Field training communication skills. Procedures for interview and interrogation skills, as well as strategies for conflict resolution. Covers standards for effective report writing in addition to requirements for callback, arrest and field reports. Also includes procedures for completing bookings. Standards for officers in training also evaluated.	Prerequisites: Permission of Department or Division.	L+L 4.0 6.0 6.0



LET279AC	Field Training: Phase III	Continuation of field training. Procedures in arrest of suspects driving under the influence (DUI) and for investigating accidents emphasized. Standards for officers in training also evaluated.	Prerequisites: Permission of Department or Division.	L+L 5.0 5.0 5.0
LET279AD	Field Training: Phase IV	Culmination of field training. Self initiated field activity, 'On-view' cases emphasized. Integration of recognizing activity that is suspicious in nature or illegal and appropriate action. Standards for officers in training also evaluated.	Prerequisites: Permission of Department or Division.	L+L 4.0 6.0 6.0
LET280	Peace Officer Certification	Training program for peace officers, leading to certification by the Arizona Peace Officer Standards and Training Board (AzPOST), the statutory agency for certifying peace officers in Arizona. Covers current industry-specific training including expectations of recruits in the areas of academics, physical fitness, mental, and emotional preparation. Emphasis on professional and ethical behavior.	Prerequisites: Employment by the partnership organization is required for enrollment in this course.	L+L 40.0 56.0 56.0
LET280AA	Peace Officer Certification I	Phase I of the training program for peace officers, leading to certification by the Arizona Peace Officer Standards and Training Board (AzPOST), the statutory agency for certifying peace officers in Arizona. Covers current industry-specific training including expectations of recruits in the areas of academics, physical fitness, mental, and emotional preparation. Emphasis on professional and ethical behavior.	Prerequisites: Students must comply with AzPOST standards for peace officers.	L+L 20.0 28.0 28.0

LET280AB	Peace Officer Certification II	Phase II of the training program for peace officers, leading to certification by the Arizona Peace Officer Standards and Training Board (AzPOST), the statutory agency for certifying peace officers in Arizona. Covers current industry-specific training including expectations of recruits in the areas of academics, physical fitness, mental, and emotional preparation. Emphasis on professional and ethical behavior.	Prerequisites: A grade of C or better in AJS/LET280AA or permission of Program Director.	L+L 20.0 28.0 28.0
LET282	Police Roles and Responsibilities	Analysis of the various roles and responsibilities of law enforcement agencies and officers. Interaction with other elements of the criminal justice system included. Also covers jurisdiction issues and relationships, adult justice systems and juvenile justice systems	Prerequisites: None.	LEC 4.0 4.0 4.0
LET284	Professionalism Within Policing	Examination of police authority and responsibilities with an emphasis on ethical decision-making. Includes organizational strategies for promoting high levels of integrity and professionalism. Case law with relation to organizational and individual officer liability also covered	Prerequisites: None.	LEC 4.0 4.0 4.0
LET285AA	Current Issues in Law Enforcement Technology	Course in law enforcement technology with an emphasis on current issues not covered in other law enforcement courses.	Prerequisites: None.	LEC 1.0 1.0 1.0
LET285BA	Current Issues in Law Enforcement Technology	Course in law enforcement technology with an emphasis on current issues not covered in other law enforcement courses.	Prerequisites: None.	LEC 2.0 2.0 2.0
LET286	Modern Policing Strategies	Overview of community policing programs and problem-solving models. Covers the origins, meaning and development of policing programs. Contemporary programs covering the implementation and evaluation of community policing strategies are emphasized	Prerequisites: None.	LEC 4.0 4.0 4.0

MAE296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
MAE296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
MAE296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

MAE296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
MAE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MAE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

MAE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MAS125	Professionalism in Healthcare	Exploration of principles and procedures for professional behaviors in various healthcare settings.	Prerequisites: Acceptance into the Medical Assisting program and permission of Program Director or Instructor.	LEC 1.0 1.0 1.0
MAS126	Administrative Procedures and Communication	Exploration of fundamental administrative procedures in various healthcare settings.	Prerequisites: Acceptance into the Medical Assisting program and permission of Program Director or Instructor.	LEC 3.0 3.0 3.0
MAS127	Administrative Procedures and Processes	Brief overview provided of administrative procedures as they apply to insurance, coding, billing and electronic health records (EHR).	Prerequisites: Acceptance into the Medical Assisting program and permission of Program Director or Instructor.	L+L 3.0 3.0 3.0
MAS130	Basic Anatomy, Physiology and Pathophysiology of Body Systems	Brief overview provided of anatomy, physiology and pathophysiology of body systems as they relate to an entry-level healthcare professional. In addition, basic microbiology will be reviewed.	Prerequisites: Acceptance into the Medical Assisting program and permission of Program Director or Instructor. Prerequisites: A grade of C or better in HCC145 or permission of Program Director or Corequisites: HCC145.	LEC 2.0 2.0 2.0
MAS220	Laboratory Testing in Various Healthcare Settings	Introduction to basic Point of Care Testing (POCT), specimen collection, and handling. Theory and practice of basic phlebotomy and application of fundamental phlebotomy procedures and techniques in a clinical laboratory or ambulatory healthcare setting.	Prerequisites: Acceptance into the Medical Assisting program or permission of Program Director or Instructor.	L+L 3.0 5.0 5.0

MAS260	Clinical Procedures	Exploration of clinical principles and procedures for the medical assistant in various healthcare settings.	Prerequisites: Acceptance into the Medical Assisting program and (a grade of C or better in MAS130 and HCC145) or permission of Program Director.	L+L 3.0 6.0 6.0
MAS265	Administration of Medication	Exploration of principles and procedures for basic dosage calculation and administration of medications for medical assistants in various healthcare settings.	Prerequisites: Acceptance into the Medical Assisting program and (a grade of C or better in MAS130 and HCC145) and permission of Program Director or Instructor.	L+L 3.0 6.0 6.0
MAS274	Medical Administrative Assisting Practicum	Prepares and engages students in a practicum experience in medical administrative assisting that includes the application of administrative duties, procedures, and knowledge derived from program coursework.	Prerequisites: Acceptance into the Medical Assisting program and (a grade of C or better in HCC130, MAS125, MAS126, MAS127, and MAS130) and permission of Program Director or Instructor.	LAB 2.0 6.0 6.0
MAS275	Clinical Medical Assisting Practicum	Prepares and engages students in a practicum experience in medical assisting that includes the application of clinical duties, procedures, and knowledge derived from program coursework.	Prerequisites: Acceptance into the Medical Assisting program and (a grade of C or better in HCC130, MAS125, MAS126, MAS127, MAS220, MAS260, and MAS265) and permission of Program Director or Instructor.	LAB 2.0 9.6 9.6
MAS280	Medical Assisting Program Review: Assisting	Prepares students for the medical assisting national credential examination, and provides tools and strategies for gainful employment.	Prerequisites: Acceptance into the Medical Assisting program and (a grade of C or better in HCC130, MAS125, MAS126, MAS127, MAS220, MAS260, and MAS265) and permission of Program Director or Instructor.	LEC 1 1 1
MAS280AA	Medical Administrative Assisting Program Review: Administrative	Prepares students for the medical administrative assisting national credential examination, and provides tools and strategies for gainful employment.	Prerequisites: Acceptance into the Medical Administrative Assisting program and a grade of C or better in HCC130, MAS125, MAS126, MAS127, and MAS130 and permission of Program Director or Instructor.	LEC 1.0 1.0 1.0

MAT051	Number Sense I	Primary emphasis on conceptual understanding of whole numbers, integers and mathematical operations. Use systems of measure and Pythagorean Theorem. Focus on mathematical language, connections, patterns and reasoning.	Prerequisites: None.	LEC 1.0 1.0 1.0
MAT052	Number Sense II	Primary emphasis on conceptual understanding of decimals and fractions, and decimal and fraction addition and subtraction. Solving problems involving decimals and fractions. Focus on mathematical language, connections, patterns and reasoning.	Prerequisites: A grade of C or better in MAT051, OR an appropriate district placement.	LEC 1.0 1.0 1.0
MAT053	Multiplicative and Proportional Reasoning	Primary emphasis on conceptual understanding of decimals and fractions, and decimal and fraction multiplication and division. Solving problems involving decimals, fractions, and percentages. Focus on additive and multiplicative reasoning including proportionality and similarity.	Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052), OR an appropriate district placement.	LEC 1.0 1.0 1.0
MAT055	Algebraic Structures	Emphasis on meanings related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations.	Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052 and MAT053), OR a grade of C or better for (MAT081 or MAT082 or MAT083 or MAT085 or MAT089), OR an appropriate district placement.	LEC 1.0 1.0 1.0

MAT056	Functions I	Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations.	Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052 and MAT053 and MAT055), OR a grade of C or better in (MAT055 and (MAT081 or MAT082 or MAT083 or MAT085 or MAT089)), OR an appropriate district placement.	LEC 1.0 1.0 1.0
MAT057	Functions II	Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally and connect the different representations. Model and solve real world problems involving constant rate of change.	Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052 and MAT053 and MAT055 and MAT056), OR a grade of C or better in (MAT055 and MAT056 and (MAT081 or MAT082 or MAT083 or MAT085 or MAT089)), OR an appropriate district placement.	LEC 1.0 1.0 1.0
MAT065	Graphing Calculator	Computations, graphing, matrices, and elementary programming using a graphing calculator	Prerequisites: None.	LEC 1.0 1.0 1.0
MAT072	Number and Operation Sense	Primary emphasis on conceptual understanding of number and mathematical operations. Focus on mathematical language, connections, patterns and reasoning.	Prerequisites: None.	LEC 3.0 3.0 3.0
MAT081	Basic Arithmetic	Primary emphasis on conceptual understanding of and solving problems involving whole numbers, integers, mathematical operations, decimals, decimal operations, fractions, percentages, angles and geometric figures. Use of systems of measure, similarity, proportionality and the Pythagorean theorem. Focus on mathematical language, connections, patterns and reasoning, and additive and multiplicative reasoning.	Prerequisites: None.	LEC 4.0 4.0 4.0



MAT082	Basic Arithmetic	Primary emphasis on conceptual understanding of and solving problems involving whole numbers, integers, mathematical operations, decimals, decimal operations, fractions, percentages, angles and geometric figures. Use of systems of measure, similarity, proportionality and the Pythagorean theorem. Focus on mathematical language, connections, patterns and reasoning, and additive and multiplicative reasoning.	Prerequisites: None.	LEC 3.0 3.0 3.0
MAT085	Basic Arithmetic/College Mathematics Prep	Primary emphasis on conceptual understanding of and solving problems involving whole numbers, integers, mathematical operations, decimals, decimal operations, fractions, percentages, angles and geometric figures. Use of systems of measure, similarity, proportionality and the Pythagorean theorem. Focus on mathematical language, connections, patterns and reasoning, and additive and multiplicative reasoning.	Prerequisites: None.	LEC 5.0 5.0 5.0
MAT089	Basic Mathematics for Nursing	Primary emphasis placed on fundamental operations with whole numbers, fractions, decimals, integers, rational numbers and percentages. Other topics include solving linear equations and unit analysis	Prerequisites: None.	LEC 1.0 1.0 1.0

MAT090	Introductory Algebra	<p>Emphasis on meanings related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations. Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations. Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally and connect the different representations. Model and solve real world problems involving constant rate of change.</p>	<p>Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052 and MAT053), OR a grade of C or better in (MAT081 or MAT082 or MAT083 or MAT085 or MAT089), OR an appropriate district placement.</p>	LEC 5.0 5.0 5.0
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MAT091	Introductory Algebra	<p>Emphasis on meanings related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations. Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations. Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally and connect the different representations. Model and solve real world problems involving constant rate of change.</p>	<p>Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052 and MAT053), OR a grade of C or better in (MAT081 or MAT082 or MAT083 or MAT085 or MAT089), OR an appropriate district placement.</p>	LEC 4.0 4.0 4.0
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MAT092	Introductory Algebra	<p>Emphasis on meanings related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations. Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations. Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally and connect the different representations. Model and solve real world problems involving constant rate of change.</p>	<p>Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052 and MAT053), OR a grade of C or better in (MAT081 or MAT082 or MAT083 or MAT085 or MAT089), OR an appropriate district placement.</p>	LEC 3.0 3.0 3.0
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MAT095	Introductory Algebra/College Algebra Prep	<p>Emphasis on meanings related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations. Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations. Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally, and connect the different representations. Model and solve real world problems involving constant rate of change.</p>	Prerequisites: None.	LEC 5.0 5.0 5.0
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MAT096	Introductory Algebra/College Algebra Prep	<p>Emphasis on meanings related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations. Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations. Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally and connect the different representations. Model and solve real world problems involving constant rate of change.</p>	Prerequisites: None.	LEC 6.0 6.0 6.0
MAT103	College Mathematics Prep	<p>Foundational knowledge of topics necessary for success in College Mathematics. Emphasis on understanding mathematical concepts and their applications. Topics include number sense, proportional reasoning, numerical and algebraic expressions, linear equations, and representations of data.</p>	Prerequisites: None.	LEC 3.0 3.0 3.0

MAT108	Tutored Mathematics	Structured tutorial assistance and math study skills to help students achieve success in a mathematics course in which they are concurrently enrolled. Mathematics study skills emphasized.	Prerequisites: None. Corequisites: (MAT150 or MAT151 or MAT151AA or MAT151AB or MAT151AC or MAT151AD or MAT152 or MAT155 or MAT156), OR any lower numbered MAT class, OR permission of Department/Division Chair.	LEC 2.0 2.0 2.0
MAT108AA	Tutored Mathematics	Structured tutorial assistance and math study skills to help students achieve success in a mathematics course in which they are concurrently enrolled. Mathematics study skills emphasized.	Prerequisites: None. Corequisites: (MAT150 or MAT151 or MAT151AA or MAT151AB or MAT151AC or MAT151AD or MAT152 or MAT155 or MAT156), OR any lower numbered MAT class, OR permission of Department/Division Chair.	LEC 1.0 1.0 1.0
MAT112	Mathematical Concepts and Applications	A problem solving approach to mathematics as it applies to real-life situations. Development, use and communication of mathematical concepts and applications that relate to measurement, percentage, practical geometry, statistics, finance, and unit conversions.	Prerequisites: None.	LEC 3.0 3.0 3.0
MAT114	College Algebra Prep	Proper use of function notation, average rate of change of functions, and evaluating arithmetic and algebraic expressions. Analysis of linear and quadratic equations, and their applications; graphs of linear and quadratic functions; operations on polynomial expressions.	Prerequisites: None.	LEC 4.0 4.0 4.0
MAT115	College Algebra Prep	Proper use of function notation, average rate of change of functions, and evaluating arithmetic and algebraic expressions. Analysis of linear and quadratic equations, and their applications; graphs of linear and quadratic functions; operations on polynomial expressions.	Prerequisites: None.	LEC 5.0 5.0 5.0

MAT120	Intermediate Algebra	Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions.	Prerequisites: A grade of C or better in each of the following courses: (MAT055 and MAT056 and MAT057), OR a grade of C or better in (MAT090 or MAT091 or MAT092 or MAT095 or MAT096), OR an appropriate district placement.	LEC 5.0 5.0 5.0
MAT121	Intermediate Algebra	Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions.	Prerequisites: A grade of C or better in each of the following courses: (MAT055 and MAT056 and MAT057), OR a grade of C or better in (MAT090 or MAT091 or MAT092 or MAT095 or MAT096), OR an appropriate district placement.	LEC 4.0 4.0 4.0
MAT122	Intermediate Algebra	Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions.	Prerequisites: A grade of B or better in each of the following courses: (MAT055 and MAT056 and MAT057), OR a grade of B or better in (MAT090 or MAT091 or MAT092 or MAT095 or MAT096), OR an appropriate district placement.	LEC 3.0 3.0 3.0
MAT126	Intermediate Algebra with Review	Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions.	Prerequisites: None.	LEC 6.0 6.0 6.0
MAT140	College Mathematics	Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include proportional reasoning, modeling, finance, probability, and statistics.	Prerequisites: An appropriate District placement, or a grade of C or better in (MAT052, MAT053, and MAT055), or (MAT055, MAT056, and MAT057), or MAT085, or MAT09+, or MAT103 or MAT114 or MAT115.	LEC 5.0 5.0 5.0



MAT141	College Mathematics	Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include proportional reasoning, modeling, finance, probability, and statistics.	Prerequisites: An appropriate District placement, or a grade of C or better in (MAT052, MAT053, and MAT055), or (MAT055, MAT056, and MAT057), or MAT085, or MAT09+, or MAT103 or MAT114 or MAT115.	LEC 4.0 4.0 4.0
MAT142	College Mathematics	Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include proportional reasoning, modeling, finance, probability, and statistics.	Prerequisites: An appropriate District placement, or a grade of C or better in (MAT052, MAT053, and MAT055), or (MAT055, MAT056, and MAT057), or MAT085, or MAT09+, or MAT103 or MAT114 or MAT115.	LEC 3.0 3.0 3.0
MAT145	College Mathematics with Review	Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include proportional reasoning, modeling, finance, probability, and statistics, along with review of arithmetic and introductory algebra, as needed.	Prerequisites: None.	LEC 5.0 5.0 5.0
MAT146	College Mathematics with Review	Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include proportional reasoning, modeling, finance, probability, and statistics, along with review of arithmetic and introductory algebra, as needed.	Prerequisites: None.	LEC 6.0 6.0 6.0

MAT150	College Algebra/Functions	Analysis and interpretation of the behavior and nature of functions including linear, quadratic, higher-order polynomials, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, and modeling and solving real world problems.	Prerequisites: A grade of C or better in MAT095, or MAT096, or MAT114, or MAT115, or MAT12+, OR an appropriate district placement for MAT15+, OR permission of Department or Division Chair.	LEC 5.0 5.0 5.0
MAT151	College Algebra/Functions	Analysis and interpretation of the behavior and nature of functions including linear, quadratic, higher-order polynomials, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, and modeling and solving real world problems.	Prerequisites: A grade of C or better in MAT095, or MAT096, or MAT114, or MAT115, or MAT12+, OR an appropriate district placement for MAT15+, OR permission of Department or Division Chair.	LEC 4.0 4.0 4.0
MAT152	College Algebra/Functions	Analysis and interpretation of the behavior and nature of functions including linear, quadratic, higher-order polynomials, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, and modeling and solving real world problems.	Prerequisites: A grade of C or better in MAT095, or MAT096, or MAT114, or MAT115, or MAT12+, OR an appropriate district placement for MAT15+, OR permission of Department or Division Chair.	LEC 3.0 3.0 3.0
MAT155	College Algebra/Functions with Review	Analysis and interpretation of the behavior and nature of functions including linear, quadratic, higher-order polynomials, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, and modeling and solving real world problems.	Prerequisites: A grade of C or better in (MAT055, MAT056, and MAT057), or MAT09+, or MAT114, or MAT115, or an appropriate district placement for MAT120 or MAT121 or MAT122, or permission of Department/Division Chair.	LEC 5.0 5.0 5.0

MAT156	College Algebra/Functions with Review	Analysis and interpretation of the behavior and nature of functions including linear, quadratic, higher-order polynomials, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, and modeling and solving real world problems, along with review of intermediate algebra, as needed.	Prerequisites: A grade of C or better in each of the following: (MAT055, MAT056, and MAT057), OR MAT09+ or MAT114 or MAT115, OR an appropriate district placement for MAT120 or MAT121 or MAT122, OR permission of Department or Division Chair.	LEC 6.0 6.0 6.0
MAT172	Finite Mathematics	An introduction to the mathematics required for the study of social and behavioral sciences. Includes combinatorics, probability, descriptive statistics, matrix algebra, linear programming and the mathematics of finance. Includes applications of technology in problem-solving.	Prerequisites: A grade of C or better in (MAT150 or MAT151 or MAT151AA or MAT151AB or MAT151AC or MAT151AD or MAT152 or MAT155 or MAT156), OR MAT187, OR an appropriate district placement.	LEC 3.0 3.0 3.0
MAT182	Plane Trigonometry	A study of measures of angles, properties of graphs of trigonometric functions, fundamental identities, addition and half-angle formulas, inverse trigonometric functions, solutions of trigonometric equations, complex numbers and properties of triangle solution. May receive credit for only one of the following: MAT182 or MAT187.	Prerequisites: A grade of C or better in (MAT150 or MAT151 or MAT151AA or MAT151AB or MAT151AC or MAT151AD or MAT152 or MAT155 or MAT156), OR an appropriate district placement. Corequisites: (MAT150 or MAT151 or MAT151AA or MAT151AB or MAT151AC or MAT151AD or MAT152 or MAT155 or MAT156).	LEC 3.0 3.0 3.0
MAT187	Precalculus	A precalculus course combining topics from college algebra and trigonometry. Preparation for analytic geometry and calculus.	Prerequisites: A Grade of B or better in (MAT120 or MAT121 or MAT122 or MAT122AA or MAT122AB or MAT122AC or MAT126), OR an appropriate district placement.	LEC 5.0 5.0 5.0

MAT206	Elements of Statistics	Basic concepts and applications of statistics, including data description, estimation and hypothesis tests.	Prerequisites: A grade of C or better in MAT14+, or MAT15+, or MAT187, or equivalent, or an appropriate District placement, or permission of Department/Division Chair.	LEC 3.0 3.0 3.0
MAT212	Brief Calculus	Introduction to the theory, techniques and applications of the differential and integral calculus of functions with problems related to business, life, and the social sciences.	Prerequisites: A grade of C or better in MAT15+, or MAT187, or an appropriate District placement.	LEC 3.0 3.0 3.0
MAT213	Brief Calculus	Introduction to the theory, techniques, and applications of the differential and integral calculus of functions with problems related to business, life, and the social sciences.	Prerequisites: A grade of C or better in MAT15+, or MAT187, or an appropriate District placement.	LEC 4.0 4.0 4.0
MAT217	Mathematical Analysis for Business	An introduction to the mathematics required for the study of business. Includes multivariable optimization, Lagrange multipliers, linear programming, linear algebra, probability, random variables, discrete and continuous distributions.	Prerequisites: A grade of C or better in MAT212, or MAT213, or MAT220, or MAT221.	LEC 3.0 3.0 3.0
MAT218	Mathematical Analysis for Business	An introduction to the mathematics required for the study of business. Includes multivariable optimization, Lagrange multipliers, linear programming, linear algebra, probability, random variables, discrete and continuous distributions.	Prerequisites: A grade of C or better in MAT212, or MAT213, or MAT220, or MAT221.	LEC 4.0 4.0 4.0
MAT220	Calculus with Analytic Geometry I	Limits, continuity, differential and integral calculus of functions of one variable.	Prerequisites: A grade of C or better in (MAT182 and MAT15+), or MAT187, or an appropriate District placement.	LEC 5.0 5.0 5.0
MAT221	Calculus with Analytic Geometry I	Limits, continuity, differential and integral calculus of functions of one variable.	Prerequisites: A grade of C or better in (MAT182 and MAT15+), or MAT187, or an appropriate District placement.	LEC 4.0 4.0 4.0

MAT222	Introduction to Actuarial Science: Elements and Techniques	An introduction to the mathematics of actuarial science. Exploration of actuarial science as a profession, including but not limited to mathematical skills applied for problem-solving and technologies used in risk management and financial modeling.	Prerequisites: A grade of C or better in [(MAT220 or MAT221) and CIS105] or permission of Department/Division Chair.	LEC 3.0 3.0 3.0
MAT225	Elementary Linear Algebra	Introduction to matrices, systems of linear equations, determinants, vector spaces, linear transformations and eigenvalues. Emphasizes the development of computational skills.	Prerequisites: A grade of C or better in MAT212 or MAT213 or MAT220 or MAT221, or equivalent.	LEC 3.0 3.0 3.0
MAT227	Discrete Mathematical Structures	Course emphasizes discrete mathematics connections to computer science by exposing students to foundational concepts of set theory, logic, counting, induction, proof techniques, graph theory, and algorithms.	Prerequisites: A grade of C or better in MAT212, or MAT213, or MAT220, or MAT221, or permission of Department or Division Chair.	LEC 3.0 3.0 3.0
MAT230	Calculus with Analytic Geometry II	Techniques of integration for both proper and improper integrals with applications to the physical and social sciences, elements of analytic geometry, and the analysis of sequences and series.	Prerequisites: A grade of C or better in MAT220 or MAT221 or equivalent.	LEC 5.0 5.0 5.0
MAT231	Calculus with Analytic Geometry II	Techniques of integration for both proper and improper integrals with applications to the physical and social sciences, elements of analytic geometry, and the analysis of sequences and series.	Prerequisites: A grade of C or better in MAT220 or MAT221 or equivalent.	LEC 4.0 4.0 4.0
MAT240	Calculus with Analytic Geometry III	Multivariate calculus including vectors, vector- valued functions, partial differentiation, multiple integration, and an introduction to vector fields.	Prerequisites: A grade of C or better in Grade of C or better in MAT230 or MAT231.	LEC 5.0 5.0 5.0
MAT241	Calculus with Analytic Geometry III	Multivariate calculus including vectors, vector- valued functions, partial differentiation, multiple integration and an introduction to vector fields.	Prerequisites: A grade of C or better in MAT230 or MAT231.	LEC 4.0 4.0 4.0

MAT256	Investigating Quantity: Number, Operations and Numeration Systems	Explore number, numeration systems and operations on numbers. Techniques of problem solving with an emphasis on exploring a variety of strategies. Use a variety of visualization techniques to develop a conceptual understanding of these topics.	Prerequisites: A grade of C or better in (MAT15+ or higher), or (MAT12+ and MAT14+), or (MAT14+ and an appropriate District placement to permit enrollment in MAT150 or MAT151 or MAT152), or permission of Department or Division Chair.	LEC 4.0 4.0 4.0
MAT257	Investigating Geometry, Probability and Statistics	Explores geometry, measurement, probability and statistics. Uses visualization, technologies, problem solving, reasoning and proof to develop a conceptual understanding of these topics.	Prerequisites: A grade of C or better in MAT256 or permission of Department/Division Chair.	LEC 4.0 4.0 4.0
MAT261	Differential Equations	Ordinary differential equations with applications including Laplace transforms with numerical methods.	Prerequisites: A grade of C or better in MAT230 or MAT231 or equivalent.	LEC 4.0 4.0 4.0
MAT262	Differential Equations	Ordinary differential equations with applications including LaPlace transforms with numerical methods.	Prerequisites: A grade of C or better in MAT230 or MAT231 or equivalent.	LEC 3.0 3.0 3.0
MAT276	Modern Differential Equations	Introduces differential equations, theoretical and practical solution techniques with applications. Problem solving using MATLAB.	Prerequisites: A grade of C or better in MAT230 or MAT231 or permission of Department/Division Chair.	LEC 4.0 4.0 4.0
MAT277	Modern Differential Equations	Introduces differential equations, theoretical and practical solution techniques with applications. Problem solving using MATLAB.	Prerequisites: A grade of C or better in MAT230 or MAT231 or permission of Department/Division Chair.	LEC 3.0 3.0 3.0
MAT282AA	Service-Learning Experience in Mathematics	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
MAT282AB	Service-Learning Experience in Mathematics	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
MAT282AC	Service-Learning Experience in Mathematics	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0

MAT290	Mathematics Professional Development	Expand subject matter content knowledge and pedagogical content knowledge of the mathematics taught at the community college and beyond through an in-depth study of at least one mathematical concept; e.g. positional numeration system or mathematical properties, and the progression of the selected concept(s) through the courses offered at the community college level and beyond. Use of a variety of instructional strategies including student-centered lesson design, inquiry-based learning, problem-based learning, review of relevant literature and so forth as well as classroom observations during which the concept is taught.	Prerequisites: None.	LEC 1.0 1.0 1.0
MAT295	Special Topics in Mathematics	Conceptual and computational aspects of a special topic in modern mathematics.	Prerequisites: Permission of Department/Division Chair.	LEC 1.0 1.0 1.0
MAT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

MAT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
MAT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MAT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0



MAT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Department/Division Chair.	LAB 1.0 1.0 0.0
MAT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Department/Division Chair.	LAB 2.0 2.0 0.0
MAT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Department/Division Chair.	LAB 3.0 3.0 0.0

MBC100	Fundamentals of Medical Billing and Coding	<p>Fundamentals in health care delivery, including career and labor market information, medical law and patients' rights, as well as health care worker responsibilities. Personal wellness covers nutrition, stress management, and exercise. Occupational Safety and Health Administration (OSHA) standards and facility safety. Communication skills focus on teamwork in the health care setting, personal communications skills, and intercultural communication strategies. Medical terminology for health care workers uses a body systems approach to terms relating to structure and function. Medical terms are analyzed and built based on term parts, such as root words, suffixes, and prefixes; abbreviations are included. Clinical pathophysiology includes causes of disease and the impact on the human body. Diagnosis and treatment of diseases covers procedures and diagnostic tests. Pharmacology for allied health professionals covers chemical, generic, and trade or brand names of drugs. Routes of administration, regulations, classifications and categories of schedule drugs are covered, as well as abbreviations and symbols used in relation to drug administration and prescriptions.</p>	Prerequisites: Admission into the Medical Billing and Coding program.	324
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MBC110	Medical Billing	The introduction to medical billing and reimbursement focuses on an overview of the medical billing profession. Claims processing and billing guidelines are covered. Study of the major third-party payers, military carriers, as well as Medicare and Medicaid. Focuses on correct billing practices. Included are types of coverage offered, eligibility, and reimbursement methodologies. Actual medical claims processing with accuracy is learned for patients in the non-hospital setting. Management of claims to ensure confidentiality, data retention, and successful payment for services.	Prerequisites: MBC100.	110
MBC120	Medical Coding	ICD-10 diagnostic coding using the International Classification of Diseases, 10th revision, clinical modification. Use of appropriate guidelines and federal, state, and local compliance standards for coding diagnoses. Application of diagnostic codes for outpatient and ambulatory coding assignment. Introduction to current procedural terminology (CPT) from both facility and physician perspectives. General content, coding guidelines, and the role in healthcare reimbursement are covered. Coding of basic medical and surgical services including the use of modifiers. In-depth exposure to CPT coding, reimbursement trends, guidelines, and coding from physician documentation. Application of current evaluation and management documentation guidelines. Emphasis on surgical and diagnostic procedures. Appropriate assignment of CPT and healthcare common procedural coding system (HCPCS).	Prerequisites: MBC100.	296

MBC130	Examination Review	Extensive, hands-on coding that prepares the student to register and sit for the national CPC (Certified Professional Coder) exam offered through the American Academy of Professional Coders (AAPC) to obtain certification for a medical coding career in an outpatient facility. Review of fundamental coding skills for an outpatient setting and knowledge and expertise in reviewing and assigning the correct ICD-10-CM, CPT, and HCPCS codes. Test taking techniques are included to optimize examination preparation. Timed practice exams are included in this course to simulate the actual CPC examination. The outcome will help the student determine his or her readiness for the national certification exam.	Prerequisites: MBC100 and MBC120.	45
MBC140	Computers in Medical Billing and Coding	Health record documentation for allied health professionals is an introduction to computer applications in health care settings. Students will use a simulation of an electronic health record (EHR) for billing, coding entry, and patient accounts. A basic review of federal, state, and organizational documentation guidelines is included, as well as legal and ethical issues applicable to health information documentation and coding practices.	Prerequisites: MBC100, MBC110, MBC120, and MBC130 or permission of Program Director.	30
MCM181	Conflict Mediation	Develop communication skills necessary to conduct mediation in formal and informal settings. Applies principles and theories of message production and responding, listening, questioning, source and receiver factors, and emotion to conflict management communication. Emphasis on respecting diversity and empowering joint problem solving throughout	Prerequisites: None.	LEC 3.0 3.0 3.0

MCO120	Media and Society	Study of historical and contemporary roles of media and its pervasiveness in society as it relates to culture, politics and education.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
MCO220	Cultural Diversity and the Media	Images of the diverse cultures and gender issues within the U.S. media. Exploration of racial and gender roles which shape the media as well as media roles which influence U.S. race relations and racial change. Roles, contributions, and challenges of the minority press in the United States.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0
MCO296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
MCO296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

MCO296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MCO296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
MCO298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

MCO298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MCO298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MCP100	Basics of Meat Cutting	Shop safety and sanitation, proper use of power and hand tools, equipment setup, breakdown, and cleanup, safe lifting techniques, and customer service.	Prerequisites: None.	170
MCP100	Basics of Meat Cutting	Fundamentals of meat department safety and sanitation. Introduction to power and hand tools, equipment breakdown and setup, meat department operations, teamwork, and customer service.	Prerequisites: None.	170
MCP101	Introduction to Meat Clerk	Introduction to the retail meat environment, weight conversions, meat processing, inventory control, basic knife skills, packaging, stocking, and merchandising skills. Emphasis on accuracy, quality, and productivity.	Prerequisite: None.	184

MCP101	Introduction to Meat Clerk	Introduction to the retail meat environment, weight conversions, meat processing, inventory control, basic knife skills, packaging, stocking, and merchandising skills. Emphasis on accuracy, quality, and productivity.	Prerequisite: None.	184
MCP103	Meat Fabrication	Identification and processing cuts of meat, basic anatomy, with emphasis on accuracy, quality, productivity, sales, and customer relationships. Mastery of skills in processing cuts of meat, including specialized cuts of meats, with emphasis on accuracy, quality, productivity, retail, sales, and customer service.	Prerequisites: None.	225
MCP103	Meat Fabrication	Reinforcement of skills for processing cuts of meat, including specialized cuts of meat. Course emphasizes sanitation, accuracy, quality, productivity, retail sales, and customer service.	Prerequisites: None.	225
MCP104	Merchandising	Learn to identify, cut, wrap, weigh, and display all retail cuts for meat case. Topics include organization, sanitation, meat labels/tags and customer service.	Prerequisites: None.	225
MCP104	Merchandising	Advanced cutting, wrapping, weighing, and displaying retail cuts of meat. Topics include sanitation, accuracy, quality control, productivity, retail sales, and customer service.	Prerequisites: None.	225



MDC100	Medical Assisting Fundamentals	<p>Overview of current health care professions, health care delivery systems, third party payers, and facility ownership. Health organization structure, patient rights and quality care. Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Occupational Safety and Health Administration (OSHA) standard precautions and facility safety. Basic communication skills which facilitate teamwork in the health care setting. Focus on development of personal communication skills and an understanding of how effective communication skills promote teamwork. Focus on intercultural communication strategies. Medical terminology used in health care, with special care populations and in special services. Body systems approach to terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing terms using word parts. Spelling of medical abbreviations, symbols, and terminology.</p>	Prerequisites: Admission into the Medical Assistant program.	105
MDC102	Medical Assisting Front Office	<p>Application of basic pathophysiology and psychology of body systems as they relate to an entry-level health care professional's role. Principles and procedures for front office administrative skills. Application of insurance, coding and billing. Introduction to the electronic health record in the physician's office. Principles and procedures in using an office automated computerized system for entering patient information and tracking patient billing. Health Insurance Portability and Accountability Act (HIPAA) regulations, and security measures for electronic health records (EHR).</p>	Prerequisites: MDC100	215

MDC103	Introduction to Medical Assisting	<p>This course develops the foundation of healthcare through an understanding of anatomy and physiology, medical terminology and application of basic pathophysiology as it relates to an entry-level medical assisting. Medical terminology as it related to structures, functions, diseases, procedures, and diagnostic testing. Building and analyzing terms using word parts. Medical abbreviations, symbols and correct spelling and pronunciation. Basic first aid, CPR review, and emergency preparedness. Professionalism in healthcare to ensure students are ready to enter the professional workplace including etiquette, image, manners, communication, professional relationships, responsibility and accountability, respectfulness, patient privacy. Empathy, compassion and emotional maturity specific to the healthcare setting. Focus on development of personal and professional communication skills and an understanding of how effective communication skills promote teamwork. Additional focus on intercultural communication strategies.</p>	Prerequisites: Program admission.	125
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MDC104	Fundamentals of Administrative Medical Assisting	<p>This course explores fundamental administrative procedures in various healthcare settings. Overview of the daily operations, principles and procedures for administrative skills including: medical record management, introduction to the electronic health record (EHR), and application of insurance, coding and billing. Basic administrative office policies, procedures, appointment scheduling, telephone etiquette, patient reception, financial practices, third party payers, health insurance, and basic understanding of medical billing and coding. Health organization structure, patient rights and quality care. Definition and importance of values, basic understanding of medical law and ethics. This course provides tools and strategies for gainful employment.</p>	Prerequisites: MDC103.	185
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MDC105	Fundamentals of Clinical Medical Assisting I	Overview of the daily operations, principles and procedures for clinical medical assisting, including: compliance with Occupational Safety and Health Administration (OSHA), the Centers for Disease Control and Prevention (CDC), and Clinical Laboratory Improvement Amendments (CLIA). Infection control practices including, proper disposal of biohazardous materials and sharps, aseptic handwashing, appropriate application of personal protective equipment (PPE), blood borne pathogens, fomites, chain of infection, setting up and maintaining a sterile field, surgical instrument identification and sterilization, sterile techniques, and application of sterile gloves. Definition, application and importance of performing vital signs accurately (blood pressure, pulse, respirations, temperature, pulse oximetry, height and weight). Basic understanding of the fundamental concepts of nutrition and diet as they relate to human health and disease.	Prerequisites: MDC104.	115
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MDC106	Fundamentals of Clinical Medical Assisting II	This course explores all aspects of clinical medical assisting skills, concepts, and procedures in a simulated healthcare setting. Topics include medical specialty practices and basic point-of-care testing (POCT), specimen collection and handling while complying with state and federal government agencies. The course also explores principles and procedures for basic dosage calculation and medication administration specific to medical assisting. Theory and practice of basic phlebotomy procedures and equipment. This course prepares students for the medical assisting national credential examination, and provides tools and strategies for gainful employment.	Prerequisites: MDC105.	205
MDC110	Medical Assisting Back Office I	Fundamentals of microbial control. Methods of identification and response to emergencies in a medical office. Basic point-of-care testing in a clinical setting. Specimen collection and handling. Practice of basic phlebotomy and application of fundamental phlebotomy techniques in a clinical laboratory setting or health care environment. Compliance with Occupational Safety and Health Administration (OSHA), the United States Centers for Disease Control and Prevention (CDC), and Clinical Laboratory Improvement Amendments (CLIA).	Prerequisites: MDC102	188

MDC120	Medical Assisting Back Office II	Principles and procedures for administering medications. Principles, procedures, and methods of assisting clinicians with physical examinations, procedures, treatments, and minor surgical procedures in specialty medical offices. Entry-level training to professionally perform, process, and explain the electrocardiogram. Compliance with Occupational Safety and Health Administration (OSHA), the United States Centers for Disease Control and Prevention (CDC), and Clinical Laboratory Improvement Amendments (CLIA).	Prerequisites: MDC110.	162
MDC130	Medical Assisting Practicum	This course prepares and engages students in a practicum experience with an opportunity to apply both clinical and administrative skills and concepts which include the application of duties, procedures, and knowledge derived from program coursework.	Prerequisites: MDC106 or MDC120.	200

MDL190	Clinical Laboratory Operations	<p>Overview of laboratory services, laboratory professionals, and the role of a medical laboratory technician (clinical laboratory technician). Understanding of health care reform, reimbursement, cost analysis, coding, credentialing, accreditation, and regulatory agencies. Emphasis on process improvement, laboratory mathematics, statistics, documentation, medico-legal implications, education, management and personnel, and specimen integrity. Application of pre-analytical, analytical, and post-analytical principles, infection control, and laboratory safety. Recognition of acceptable quality control and quality management principles, phlebotomy principles, and lab equipment, glassware, labware, and water purification. Includes information systems and information management in laboratories. Importance of professional growth, communicating with the patient and public, and ethical conduct.</p>	Prerequisites: Acceptance into the Medical Laboratory Science program and permission of Program Director.	LEC 2.0 2.0 2.0
MDL240	Clinical Urinalysis and Body Fluid Analysis	<p>Examines anatomy and physiology of the renal system, renal diseases, and renal function tests. Emphasis on interpretation, evaluation, and reporting of urinalysis and body fluid results, urine and body fluid collection techniques, types, specimen handling and preservation, and instrument calibration, maintenance, and quality control. Application of body fluid analyses, and chemical and microscopic analysis of urine.</p>	Prerequisites: A grade of C or better in MDL190, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	L+L 3.0 5.0 5.0

MDL241	Practicum: Clinical Urinalysis and Body Fluid Analysis	Practicum experience in clinical urinalysis and body fluid analysis based in healthcare facilities or reference laboratories. Assessment of anatomy and physiology of the renal system, renal diseases, and renal function tests. Performance of interpretation, evaluation, and reporting of urinalysis and body fluid results, urine and body fluid collection techniques, types, specimen handling and preservation, and instrument calibration, maintenance, and quality control. Performance of body fluid analyses and chemical and microscopic analysis of urine.	Prerequisites: A grade of C or better in MDL240, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	LAB 1.0 6.0 0.0
MDL242	Clinical Hematology and Hemostasis	Examines the anatomy and physiology of the hematopoietic and hemostasis systems, hematology and hemostasis case studies, anemia categories, and thrombocyte, hemostatic, and malignant and nonmalignant leukocyte disorders. Emphasis on interpreting, evaluating, and reporting hematology and hemostasis results, anticoagulant therapy, morphology, peripheral smear correlation with analyzer results and patient condition, erythrocyte indices, collection techniques, specimen handling, calibration, and quality control. Methods of analysis on hematology and hemostasis analyzers, and preventive maintenance.	Prerequisites: A grade of C or better in MDL240, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	L+L 6.0 9.0 9.0



MDL243	Practicum: Clinical Hematology and Hemostasis	Practicum experience in clinical hematology and hemostasis based in healthcare facilities or reference laboratories. Assessment of the anatomy and physiology of the hematopoietic and hemostasis systems, hematology case studies, anemia categories, and thrombocyte, malignant and nonmalignant leukocyte disorders. Application of interpreting, evaluating, and reporting hematology results, morphology, peripheral smear correlation with analyzer results, erythrocyte indices, collection techniques, specimen handling, calibration, and quality control. Emphasis on hematology and hemostasis analyzers, and preventive maintenance. Perform hematology and hemostasis analyses.	Prerequisites: A grade of C or better in MDL242, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	LAB 1.0 6.0 0.0
MDL244	Clinical Immunoematology and Immunology	Principles of immunity and immunologic testing. Causes of disorders of the immune system. Study of blood group antigens, antibodies, and genetics. Understanding of donor blood collection, component preparation, and transfusion therapies. Performance of testing techniques and evaluation of data.	Prerequisites: A grade of C or better in MDL242, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	L+L 6.0 9.0 9.0
MDL245	Practicum: Clinical Immunoematology and Immunology	Practicum in immunoematology and immunology in healthcare facilities or reference laboratories. Performance of clinical skills in immunity and immunologic testing, testing for disorders of the immune system, blood group antigens, antibodies, and genetics. Observation of donor blood collection, component preparation, and transfusion therapies. Performance of testing techniques and evaluation of data.	Prerequisites: A grade of C or better in MDL244, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	LAB 1.0 6.0 0.0

MDL246	Clinical Microbiology	<p>Emphasis on microbial infectious and bioterrorism agents, classification, morphology, phenotyping, diseases, biotechnology and molecular technology, quality assurance and quality control, epidemiological significance, and regulatory standards. Application of antimicrobial, biochemical, and differential testing, drug resistance, selection, inoculation and incubation of culture media, isolation techniques, cell culture and viral detection tests, and macroscopic and microscopic evaluation. Emphasis on staining, rapid and commercial testing methods, safety precautions, specimen collection, handling, storage, and disposal of biological material, pretreatment, decontamination, and concentration techniques, specimen type, source, and common microbial flora, specimen acceptability, and instrumentation.</p>	<p>Prerequisites: A grade of C or better in MDL244, acceptance into the Medical Laboratory Science program, and permission of the Program Director.</p>	L+L 6.0 9.0 9.0
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MDL247	Practicum: Clinical Microbiology	<p>Practicum experience in clinical microbiology based in healthcare facilities or reference laboratories. Emphasis on microbial infectious and bioterrorism agents, classification, morphology, phenotyping, diseases, biotechnology and molecular technology, quality assurance and quality control, epidemiological significance, and regulatory standards. Application of antimicrobial, biochemical, and differential testing, drug resistance, selection, inoculation and incubation of culture media, isolation techniques, cell culture and viral detection tests, and macroscopic and microscopic evaluation. Procedures for staining, rapid and commercial testing methods, safety precautions, specimen collection, handling, storage, and disposal of biological material, pretreatment, decontamination, and concentration techniques, specimen type, source, and common microbial flora, specimen acceptability, and instrumentation.</p>	Prerequisites: A grade of C or better in MDL246, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	LAB 1.0 9.0 0.0
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MDL248	Clinical Chemistry	Principles and procedures of clinical chemistry and testing for diseases of protein, nonprotein nitrogen compounds, lipid, glucose, bilirubin, liver disease, cardiac and endocrine function, toxicology, therapeutic drug monitoring, acid base balance, electrolytes, and trace elements. Emphasis on quality assurance, quality control, mathematics and statistical analysis, specimen collection, and preanalytical processes. Study of immunoassays, nucleic acid probes, viral and tumor markers, automation of analytical techniques, spectrophotometry, genetic diseases and inborn errors of metabolism, and point-of-care testing. Use of reagents, equipment, supplies, and units of measure.	Prerequisites: A grade of C or better in MDL246, acceptance into the Medical Laboratory Science program, and permission of the Program Director.	L+L 6.0 9.0 9.0
MDL249	Practicum: Clinical Chemistry	Practicum in clinical chemistry based in healthcare facilities or reference laboratories. Performance of clinical skills in clinical chemistry and testing for diseases of protein, nonprotein nitrogen compounds, lipid, glucose, bilirubin, liver disease, cardiac and endocrine function, toxicology, therapeutic drug monitoring, acid base balance, electrolytes, genetic diseases and inborn errors of metabolism, and trace elements. Application of quality assurance, quality control, mathematics and statistical analysis, specimen collection, and preanalytical processes. Performance of immunoassays, nucleic acid probes, viral and tumor markers, automation of analytical techniques, spectrophotometry, and point-of-care testing. Use of reagents, equipment, supplies, and units of measure.	Prerequisites: A grade of C or better in MDL248, acceptance into the Medical Laboratory Science program, and permission of Program Director.	LAB 1.0 9.0 0.0

MDL252	Clinical Preparation I	Examines clinical laboratory testing in a simulated laboratory environment. Emphasis on interpretation, evaluation, and reporting of a variety of laboratory results, and includes instrument calibration, maintenance, and quality control.	Prerequisites: A grade of C or better in MDL244, acceptance into the Medical Laboratory Science program, and permission of Program Director.	L+L 0.5 2.5 2.5
MDL263	Clinical Preparation II	Continuation of examination of clinical laboratory testing in a simulated laboratory environment. Emphasis on interpretation, evaluation, and reporting of a variety of laboratory results, and includes instrument calibration, maintenance, and quality control.	Prerequisites: A grade of C or better in MDL248, acceptance into the Medical Laboratory Science program, and permission of Program Director.	L+L 0.5 2.5 2.5
MDL290	Medical Laboratory Science Program Review	Preparation for the professional practice national examinations. Topics include methodologies, techniques, and problem solving relative to urinalysis; body fluids, hematology, hemostasis, immunohematology, immunology, microbiology, and chemistry. Development of a professional practice resume, personalized test taking strategies and examination study plan. Maintenance of professional competency and lifelong learning and enhancing professional practice.	Prerequisites: A grade of C or better in (MDL247 and MDL249), acceptance into the Medical Laboratory Science program and permission of Program Director.	LEC 2.0 2.0 2.0
MDL291	Medical Laboratory Science Program Capstone	Preparation for the professional practice national examinations. Topics include methodologies, techniques, and problem solving relative to urinalysis; body fluids, hematology, hemostasis, immunohematology, immunology, microbiology, and chemistry. Development of personalized test taking strategies and examination study plan.	Prerequisites: A grade of C or better in (MDL247 and MDL249), acceptance into the Medical Laboratory Science program and permission of Program Director.	LEC 1.0 1.0 1.0

MDL295AA	Special Topics: Medical Laboratory Science	Explores a special topic related to medical laboratory science. Topics vary and include concepts relevant to those advancing or pursuing careers in medical laboratory science.	Prerequisites: Permission of Program Director.	L+L 1.0 2.0 1.7
MDL295AB	Special Topics: Medical Laboratory Science	Explores a special topic related to medical laboratory science. Topics vary and include concepts relevant to those advancing or pursuing careers in medical laboratory science.	Prerequisites: Permission of Program Director.	L+L 2.0 3.0 2.7
MDL295AC	Special Topics: Medical Laboratory Science	Explores a special topic related to medical laboratory science. Topics vary and include concepts relevant to those advancing or pursuing careers in medical laboratory science.	Prerequisites: Permission of Program Director.	L+L 3.0 4.0 4.0
MEC101	HVAC I: Principles and Trade Calculations	Basic principles of heating, ventilating and air conditioning (HVAC). Trade calculations, algebraic and geometric equations, and scientific notation. Use and maintenance of HVAC trade tools	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC102	Construction Pipe Trades I	Causes, prevention and response for on-the-job accidents. Personnel protection for specific types of work place hazards. Prevention and response for electrical hazards and fire. Rigging equipment inspection and use. Lifting and moving equipment. Types of cranes and crane hand signals. Safety precautions for rigging and moving materials. Blueprint features and care. Safe and proper use of hand and power construction tools. Trade calculations using English and metric units. Effective verbal and written skill building, employability skills and concept of materials handling.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0

MEC103	HVAC II: Piping, Soldering, Brazing and Electrical	Application, preparation and joining of copper and plastic pipe. Soldering and brazing tools, materials, and procedures. Refrigeration cycle, furnace operation and maintenance. Use of multimeter and manometer. Electricity, electrical circuits, and electrical components. Measurement of voltage, current, resistance and circuit continuity. Ohm's Law	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC104	Construction Pipe Trades II	Overview of work performed by pipefitter. Hand and power tools. Motorized and engine driven equipment. Ladders and scaffolds. Pipe cutting and installation techniques. Pipe joint preparation. Oxyfuel cutting. Related Occupational Safety and Health Administration (OSHA) regulations.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC105	Residential and Industrial Plumbing I	Plumbing practices, history, laws, codes, regulations and responsibility to the public. Usage and maintenance of hand and power tools. Workplace safety and Occupational Safety and Health Administration (OSHA) requirements. Application of basic plumbing calculations and principles of science as they relate to plumbing system installation and maintenance. Characteristics, advantages, disadvantages, and uses of pipe and tube. Fittings for cast-iron, glass, clay, concrete, copper, steel, plastic. Special materials and galvanic action. Piping connections	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

MEC106	HVAC III: Systems	Air distribution systems, measurement instruments and venting and sizing. Gas-fired equipment, furnaces, heating, ventilating, and air conditioning (HVAC) systems, and electric heating systems. Alternating current (AC) motors, circuit components and testing instruments. Maintenance, safety, troubleshooting, and service techniques. Job documentation and customer relations	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC107	Residential and Industrial Plumbing II	Application of advanced plumbing calculations to include percentages, conversions, fractions, decimals, square roots, circles, angles, measurement. First aid, personal safety, and Occupational Safety and Health Act (OSHA) guidelines. Materials handling, usage, advantages, and disadvantages. Fixtures I, II, III, fittings, accessories, and valves. Blueprint reading and freehand, finished, and detailed sketching	Prerequisites: A grade of C or better in MEC105.	LEC 5.0 5.0 5.0
MEC108	Residential and Industrial Plumbing III	Water piping materials. Sources and treatment of public, private, and individual water systems. Water distribution and supply systems. Cross-connection protection and pipe identification. Hot water heaters. Sanitary drainage systems. Plumbing calculations and blueprint reading	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC109	Excavations	Excavation for underground piping systems including properties of specific soils, identification of specific soil types, hazards, abatement of hazards, Occupational Safety and Health Administration (OSHA) regulations, shoring, support systems and bedding material	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5



MEC110	Introduction to Sheet Metal	Introductory concepts of the sheet metal trade to include trade history, apprenticeships and craftsmanships. Metals and trade safety. Operation and maintenance of tools and machinery. Selection and installation of fasteners, hangers, and supports. Trade calculations including denominate numbers and metric, linear, square, volume, and weight measurements. Stretchouts and geometric figures	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC111	Drawings and Detail Sheets	Drawings, detail sheets and field sketches. Parts and types of drawings, materials, specifications and special treatments. Includes drawing procedures and sketch applications	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
MEC112	Piping Systems-Hangers and Supports	Types of piping systems, thermal expansion and insulation. Type and uses of pipe hangers and supports. Placement and installation of hangers and supports	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MEC113	Rigging for Pipefitters	Selection, inspection, use and maintenance of blocks and tackles, chain hoists, come-alongs, jacks and tuggers. Heavy rigging hardware and lifting capacity charts. Procedures for balancing Loads and rigging pipes and valves. Planning the rigging job	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MEC114	Sheet Metal: Insulation, Air, Layout and Fabrication	Purpose and installation of air distribution accessories. Thermal and acoustic insulation, fibrous glass duct liner and fiberglass blanket and fiberglass pipe and flexible foam insulation. Sheet metal layout and processes, terminology, tools, and safety. Parallel and radial line development and triangulation. Layout and fabrication of ductrun fittings	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0

MEC115	Intermediate Excavation and Underground Pipe Installation	Terminology related to excavation and underground pipe installation. Identification and use of shoring materials and premanufactured support systems. Installation of vertical shoring. Determination of the fall of sewer lines. Grades and elevation of trenches. Backfilling procedures. Equipment and procedures for underground pipe installation	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
MEC116	Pipefitting Blueprints and Specifications	Reading and interpretation of piping drawings. Tracing piping runs through several drawings. Material take-offs for basic piping configurations	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MEC117	Socket and Butt Weld Pipe Fabrication	Socket and butt weld piping including materials, fittings and drawings. Use of oxyacetylene torch for cutting plate steel, holes and pipe. Pipe end preparation including length determination, backing rings, clamps, alignment tools and procedures. Determining pipe length and aligning fittings	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 4.0 6.0 6.0
MEC118	Residential and Industrial Plumbing IV	Properties of water and plumbing traps. Air, air chamber, and sizing. High and low level pressure measurement. Manometer, gauge selection and use. Vibration, turbulence, and water hammer. Roof, floor and area drains. Oil and gas fuel systems	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC119	Basic Safety	Overview of safety rules and procedures for working on construction job sites	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0

MEC120	Basic Calculations for Construction	Addition, subtraction, multiplication and division of whole, decimal, fraction and metric numbers. Percentage and fraction conversions. Metric units of length, weight, volume and temperature. Metric system as it relates to the construction trade. Basic algebra and geometry operations and equations. Area and volume calculations of shapes.	Prerequisites: None.	L+L 1.5 1.5 1.5
MEC121	Introduction to Hand and Power Tools	Overview of the use, maintenance and safety procedures for common hand and power tools.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
MEC122	Rigging Safety and Equipment	Rigging safety, equipment and inspection. Includes crane hand signals, common rope knots, types of derricks and cranes and safety procedures for rigging and moving materials and equipment	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MEC123	Introduction to Blueprints	Basic concepts of blueprints, including terms and symbols, grid line systems and blueprint production techniques. Dimensions and blueprint reading	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
MEC124	HVAC IV: Equipment, Devices, Compressors and Pumps	Heat transfer and human comfort. Humidifiers and humidity. Air filters and air filter friction loss. Metering devices and expansion valves. Thermal expansion valves. Compressors and heat pumps. Installation, adjustment, replacement, service, troubleshooting. Reverse-cycling. Leak detection, evacuation, recovery, and charging heating, ventilating, and air conditioning (HVAC) systems. Service equipment of HVAC systems.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC126	Sheet Metal: Trade Calculations	Advanced trade calculations. Fitting blanks and stretchouts. Protractors, vernier calipers and micrometers. Piping practices and radial line development. Bend allowances, soldering tools and materials. Blueprints and drawings	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0

MEC128	SMACNA Manuals and Standards	Sheet Metal and Air Conditioning Contractors National Association (SMACNA) trade standards, codes and ordinances. SMACNA manuals. Duct fabrication standards, reference charts and tables. Tie rods and longitudinal seams. Insulation including types and installation procedures. Roof design and drainage systems, weather sealing and SMACNA flashing recommendations	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC132	Construction Pipe Trades III	Intermediate trade calculations and measuring devices. Pipe drawings and detail sheets. Occupational Safety and Health Administration (OSHA) safety regulations. Soil properties. Types of excavations and underground pipe. Installation and backfilling excavations. Handling and storage of underground pipe. Threaded piping systems.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC134	Construction Pipe Trades IV	Rigging procedures and heavy hardware. Lifting and balancing loads. Capacity charts and pipe drawings. Threaded pipe fabrication. Equivalent-conversion tables and take-outs. Oxyacetylene torch set up, lighting, and cutting. Backing rings and alignment.	Prerequisites: Registered apprenticeship status or permission of Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC139	Basic Piping Systems	Types of materials used to manufacture pipe. Specific applications of different types of pipe including advantages and disadvantages. Methods of joining pipe, including: welding, flanging, threading, and gluing. Identification and use of pipe supports and hangers	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
MEC150	Hand and Power Tools and Motorized Equipment	Selection, use and care of hand and power tools specific to the pipefitting trade. Identification, use, safety procedures and maintenance of motorized equipment utilized in pipefitting	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0

MEC151	Ladders and Scaffolds	Use, safety precautions, and maintenance of ladders and scaffolds including set-up. Maintenance procedures, safety checks, Occupational Health and Safety Administration (OSHA) standards and hazard abatement	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
MEC152	Threaded Pipe Fabrication	Fabrication of threaded pipe including, identification and proper use of specific types of pipe, identification and use of pipe fittings. Use and interpretation of drawings, identification and application of specific threads, installation procedures for threaded pipe and installation of threaded pipe	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 1.0 2.0 2.0
MEC153	Excavations and Underground Pipe	Excavation for underground piping systems including properties of specific soils, identification of specific soil types, hazards, abatement of hazards, OSHA (Occupational Safety & Health Administration) regulations, shoring, support systems and bedding material. Underground piping systems including types of piping materials and their applications, sizes of pipe, types of pipe fittings, joining methods, storage and handling of pipe	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MEC172	Residential/Commercial Plumbing Drawings	Reading and interpreting residential and commercial plumbing blueprints, drawings and specifications. Using an architect's scale, preparing materials takeoffs and developing a bill of materials	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
MEC201	HVAC V: Maintenance and Troubleshooting	Tools, instruments, equipment, components, procedures, materials, and tasks for preventative maintenance and troubleshooting of heating, ventilating and air conditioning (HVAC) systems. Microprocessor, gas, electric, and oil heating systems. Furnaces, electric heater packages for cooling, and heat pumps.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0

MEC202	Advanced Construction Pipe Trades	Pipe blueprints, drawings, and specifications. Pipefitting standards and codes. Advanced trade calculations and thermal expansion. Tables of equivalents and conversions. Motorized equipment: pumps, drain cleaners, manlifts, cable lifts. Construction vehicles. Pretest requirements. Above ground pipe installation	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC203	HVAC VI: Troubleshooting Heating and Cooling Systems	Cooling and heating systems; heat pumps, Heating, Ventilation and Air Conditioning (HVAC) systems and accessories. Commercial heating and cooling systems. Air and water balancing systems. Steam systems. Customer relations.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC204	Advanced Construction Pipe Trades II	Piping systems, hangers and supports, thermal expansion, insulation. Residential and commercial plumb drawings. Rigging equipment, load, and weight. Assembly and fabrication. Vessel trim, springs and supports. Valves, materials, fixtures. Aboveground pipe, pipe sleeves, and floor penetrations.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC205	Residential and Industrial Plumbing V	Gas and plumbing code requirements. Residential, commercial, industrial, institutional plumbing practices. Fixtures, appliances, fixture fittings, valves, and trim. Gas piping installation, pipe sizing, pipe fittings and connections, appliances, regulators, meters, controls, and corrosion. Advanced plumbing calculations. Specific plumbing systems and specialized water systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

MEC206	HVAC VII: Air Quality and Energy Conservation	Advanced blueprint reading. Architectural, plumbing, mechanical, and electrical drawings. Submittal, transfer and design. Indoor air quality. Heating, Ventilating and Air Conditioning (HVAC) equipment, components, accessories and systems. Introduction to computers and computer networks. Energy conservation and management.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC207	Residential and Industrial Plumbing VI	Advanced plumbing calculations. Offsets, tank capacities, volume and weight, ratios and proportions, sizing, and piping expansion. Energy, temperature, heat transfer, stratification, multiple heaters, and recirculation. Basic electricity and troubleshooting. Safety, current, motors, circuits, humidity and condensation. Plumbing, electrical, heating/ventilation/air conditioning (HVAC), and detail blueprints. Specialized plumbing	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC208	Residential and Industrial Plumbing VII	General considerations, leaks and drainage. Installation, repair, and service of residential, commercial, industrial, and institutional heating systems. In-ground and above-ground water piping, drainage, waste and vent. Fuel gas piping, lead products, water heaters, waste stoppages, and water hammer. Blueprint reading. Installation of waste systems. Interceptors and backwater valves. Heating systems. Water protection, and conservation in heating systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
MEC210	Steam Traps	Use of steam traps in high and low pressure steam systems. Specific types and applications, installation, troubleshooting and maintenance	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5
MEC211	In-Line Specialties for Pipefitting	Specific in-line specialty equipment for pipefitting including purpose, function and safety precautions	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5

MEC212	Maintaining Valves	Identification of valves and component parts. Operating principles, disassembly, installation, packing and repacking valves.	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 1.0 2.0 2.0
MEC213	Specialty Piping and Hot Taps	Specialty piping including flared and compression joining. Identifying, sizing and installing fittings. Brazing and soldering, calculating and bending pipe. Glass lined pipe, also hydraulic fitted compression joints and grooved pipe systems. Hot taps including identification and abatement of hazards, types and installation of fittings, hot tap machines and stopples	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 1.0 2.0 2.0
MEC214	Stress Relieving and Aligning Pipes	Identifying misalignments and causes of stress in piping systems. Methods of proper alignment and stress relief	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MEC218	Residential and Industrial Plumbing VIII	Hydraulic and plumbing theory. Pumps, uses, and design. Pump performance curves, pump installation, and maintenance. Advanced blueprint reading, sketching, and material estimating. Plumbing code. Installation code requirements. Specialty plumbing	Prerequisites: A grade of C or better in MEC208.	LEC 5.0 5.0 5.0
MEC224	HVAC VIII: Water Treatment and HVAC Design	Water problems, remedies, maintenance, and treatment. Commercial water and steam systems. Inspection and evaluation. System start up and shutdown. Cooling towers; evaporative condensers, boilers, chillers, air handlers and forced air systems. Components, accessories and design factors. Refrigerants and oils. Load calculations. Commercial and industrial refrigeration.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC226	Construction Sheet Metal and Mechanical Systems I	Field measuring and fitting. Air and duct systems and air source equipment. Welding practices, and arc-welding procedures. Brazing and flame cutting. Mechanical refrigeration fundamentals, mechanical systems, and heat pumps.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0



MEC228	Construction Sheet Metal and Mechanical Systems II	Principals of airflow. Comprehensive blueprint and specification reading. Fabrication and triangulation. Roofing materials, gutters, downspouts, and chimneys. Installation techniques of elbows, outlet tubes, gutters and gutter outlets, and roof, chimney, and wall flashing.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC230	Construction Sheet Metal and Mechanical Systems III	Estimating labor, materials, equipment, and delivery. Staff organization and staff relations. Shop production. Coordination with other trades. Air balance principle and systems. Layout and fabrication methods.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC232	Advanced Construction Pipe Trades III	Advanced pipe fabrication and layout. Calculations of offsets. Tank coils, ordinate lines, cutback lines. Tables, formulas, and resource materials. Mitered turns, lateral dimensions. True Wye, Dummy Legs and Trunions. Work planning, material needs, and inspections. Supervisory roles.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC234	Advanced Construction Pipe Trades IV	Pressure steam systems. Steam trap types, selection, placement, installation, maintenance, troubleshooting. Strainers. In-line specialty equipment. Specialty piping equipment. Hot tap types, fittings, installation, and machines. Valves and components. Thermal expansion and stress relief	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC240	Construction Sheet Metal and Mechanical Systems IV	Layout and fabrication of louvers, dampers and access doors. Room and building ventilation. Moisture, humidity, temperature, energy and air flow. Fume and exhaust systems and components. Crew Leader skills.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
MEC250	Advanced Piping Blueprints/Drawings	Reading and interpreting piping and instrumentation drawings (P&IDs) and isometric drawings. Pipefitting standards, codes and specifications	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 0.5 0.5 0.5

MEC251	Advanced Trade Calculations-Pipefitter	Thermal expansion and the use of tables of equivalents and conversion tables. Right angle trigonometry and calculation of take-outs using trigonometry	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MEC252	Motorized Equipment/Testing-Piping	Use and safety requirements of hydrostatic pumps, hydroblaster pumps, drain cleaners, manlifts, cable lifts and construction vehicles. Performing pretest requirements, service and flow tests, hydrostatic tests and steam blow tests	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
MEC253	Aboveground Pipe Installation	Identifies types of pipe, flanges, gaskets and bolts. Includes step-by-step procedures for installing pipe sleeves and floor penetrations	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 1.0 2.0 2.0
MEC254	Field Routing, Trim and Springs	Field run specifications, rigging equipment needs, load weights, assembly systems and support needs. Also includes fabricating field run piping, vessel trim and identifying, selecting and installing spring can supports	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 2.0 2.0 2.0
MEC255	Valve Installation	Identifying and installing specific types of valves. Includes procedures for storage and handling	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 1.5 1.5 1.5
MEC256	Basic Plumbing	Plumbing fixtures, drainage fixture unit ratings, and installation procedures. Includes procedures for installing fixtures, water heaters, shower and bath units, and dishwashers. Safety stressed.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 1.0 3.0 2.4
MEC257	Advanced Pipe Fabrication	Layout and fabrication of specific piping systems including: calculating and laying out simple offsets. Calculating three- line, 45 degree equal and unequal-spread offsets, laying out and fabricating tank coils and fabricating mitered turns. Laying out ordinate and cutback lines. Laying out and fabricating 90 degree mitered turns, 45 degree laterals, true "wye" fittings and "dummy legs" and "trunions".	Registered Apprentice status or permission of the apprenticeship coordinator.	L+L 4.0 6.0 6.0

MEC258	Work Planning and NDE Testing	Procedures for planning daily work activities for pipefitters. Includes: coordinating with other crafts, establishing safe working conditions and field checking. Non-destructive (NDE) examination of materials including: visual inspections, prefit inspections, and inspecting root passes. Inspecting completed welds using: borescopes, flexible fiberscopes and video scopes. NDE weld tests including: dye penetrant test, magnetic particle test, ultrasonic test, radiography and conductivity tests	Registered Apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
MFC101	Technical Documentation	Analysis and interpretation of technical drawings (prints) common to manufacturing. Mathematical calculations for determining dimensions. Introduction and application of geometric dimensioning and tolerancing (GD&T).	Prerequisites: None.	81
MFC110	Inspection Techniques	Set?up and use of inspection tools and equipment per current industry standards. Selection, completion and interpretation of information from inspection forms.	Prerequisites: None.	67
MFC111	Geometric Dimensioning and Tolerance (GDT)	Controls of geometric dimensioning and tolerance (GDT) including the form, orientation, profile and location. Includes qualifying controls per engineering documentation for the American Society of Mechanical Engineers (ASME) Y14.5 2009 Standard.	Prerequisites: None.	102
MFC113	Coordinate Measuring Machines I	Fundamentals and general aspects of coordinate measuring machines (CMM). Basic measuring techniques and operation, including conformance to geometric dimensioning and tolerancing requirements using both manual and programmable (automatic) coordinate measuring machines.	Prerequisites: None.	81

MFC120	Introduction to Manual Machining	Introduces manual machining operations related to drilling, grinding, sawing, milling, and lathe processes. Development of fundamental skills, practices and safety applications in working with manual machine tools, hand tools, and related equipment common to manufacturing. Provides theoretical and practical experiences related to the machining of various material types to produce a product to industry standards.	Prerequisites: None.	157
MFC130	CNC Machine Operator	Designed to provide a fast-track to fundamental knowledge and skills necessary for entry-level, machine operator positions. Introduction to print reading, inspection, and safe startup and operation of multi-axis computer numerical control (CNC) machines. Topics include two and three-axis program interpretation and application, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: None.	150
MFC131	CNC Machining Level I	Introduction to safe startup and operation of multi-axis computer numerical control (CNC) machines. Topics include two and three-axis program interpretation and application, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: None.	203
MFC140	Manual CNC Programming	Introduction to manual computer numerical control (CNC) programming of word address language (G&M code) for CNC machine tools. Multi-axis CNC programming for CNC controlled machines. Computer based tool path verification, CNC controller tool path verification and CNC machine tool program verification.	Prerequisites: None.	67

MGT101	Techniques of Supervision	Overview of the foundations of supervision and how to get things done within an organization through other people. The functions of planning, organizing, staffing, motivating and controlling presented	Prerequisites: None.	LEC 3.0 3.0 3.0
MGT104	Introduction to Academic and Internship Programs	An overview of college orientation and academic planning, with an emphasis on the use of academic course work and career planning to develop a successful internship experience.	Prerequisites: None.	LEC 1.0 1.0 1.0
MGT105	Leadership for Citizenship	Characteristics and types of leaders, responsibilities of leadership, and ethics of leadership as related to citizenship	Prerequisites: None.	LEC 1.0 1.0 1.0
MGT109	Development of Professional Skills and Standards	Explores the skills and qualities necessary to develop and maintain a successful professional life. Topics include management/leadership skill development, effective job search, image development, career advancement, gender issues, professional conduct, time/financial management, and human relations	Prerequisites: None.	L+L 3.0 3.0 3.0
MGT122	Health Care Supervision	Initial course for health care supervisors who are technically competent in a health care field and who are responsible for supervision of other health care workers	Prerequisites: None.	LEC 3.0 3.0 3.0
MGT126	Customer Service Skills and Strategies	Explores strategies to help improve job performance and develop a service-oriented philosophy. Uses practical training concepts and techniques to demonstrate how superior customer service can lead to competitive advantage and profitability in business. Focuses on both internal and external customers, interactions among people, processes, and systems within the organization and how to integrate these areas into a total quality delivery program	Prerequisites: None.	L+L 3.0 3.0 3.0

MGT127	Managing and Leading for Competitive Advantage	Practical training in the development of skills and expertise necessary to achieve organizational goals, with and through people. Examines functions and work activities that result in a more productive and harmonious workforce	Prerequisites: None.	L+L 3.0 3.0 3.0
MGT147	Supply Chain Management	Supply chain management, including basic concepts and underlying principles of logistics and inventory management	Prerequisites: None.	LEC 3.0 3.0 3.0
MGT148	Office Ethics and Culture	Ethical issues and standards in the office; making ethical choices. Relationships and attitudes in the office. Office politics.	Prerequisites: None.	LEC 2.0 2.0 2.0
MGT157	Introduction to Statistical Analysis of Clinical and Bioscience Data for Managers	Introduction to basic concepts and applications of statistics, including data description, estimation probability as techniques for managing, collecting, summarizing and interpreting data. Includes the use of statistical computer software (e.g., SAS) used for the management, analysis and reporting of clinical and bioscience informatics data.	Prerequisites: None.	L+L 3.0 5.0 5.0
MGT160	Project Management	Examination of concepts and methodologies for effective project management. Project planning and management from contract negotiations through project completion, including communications, human resources, management, and project scheduling as well as risk and financial management	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 3.0
MGT174	Developing A Business Plan	Understanding and applying practical methods of researching and writing a successful business plan	Prerequisites: None.	LEC 2.0 2.0 2.0
MGT175	Business Organization and Management	Covers basic principles of managing quality and performance in organizations. Covers management functions: planning, organizing, leading, and controlling. Emphasizes continual improvement, ethics, and social responsibility	Prerequisites: None.	LEC 3.0 3.0 3.0

MGT179	Utilizing the Human Resources Department	Provides the opportunity to learn how to appropriately utilize the human resources department within an organization in order to improve job performance. Topics include staffing, training and development, manpower planning, compensation and benefits, federal labor laws and why people seek outside representation	Prerequisites: None.	L+L 3.0 3.0 3.0
MGT180	Retail Management	The role of management in retailing and retail performance. Challenges and processes of retail management across various institutions.	Prerequisites: None.	LEC 3.0 3.0 3.0
MGT227	Training and Instructional Design for Health Information Technology	Overview of learning management systems, instructional design software tools, teaching techniques and strategies, evaluation of learner competencies, maintenance of training records, and measurement of training program effectiveness.	Prerequisites: Permission of Program Director or Instructor.	LEC 3.0 3.0 3.0
MGT228	Management, Planning, and Leadership for Health Information Technology	Principles of leadership and effective management of teams for Health Information Technology. Emphasis on the leadership modes and styles best suited to IT deployment. Survey of health care and public health organization and delivery in the United States, with an emphasis on professional roles, legal, ethical, and regulatory issues, and payment systems. Analysis of health reform initiatives in the U.S. Concept of "meaningful use" of electronic health records.	Prerequisites: A grade of C or better in GBS110 or MGT251 or Corequisites: GBS110 or MGT251.	LEC 3.0 3.0 3.0
MGT229	Management and Leadership I	Covers management concepts and applications for business, industry, and government organizations.	Prerequisites: None.	LEC 3.0 3.0 3.0
MGT230	Management and Leadership II	Includes practical applications of activities, issues, and problems related to current managerial and supervisory skills and talents.	Prerequisites: A grade of C or better in MGT229 or permission of Department or Division.	LEC 3.0 3.0 3.0

MGT242	Project Scope and Procurement Management	Scope management and procurement management in a project environment, including how a project's scope is planned, defined, and verified. Concepts of scope change management. Concepts of procurement management, including procurement planning, supplier solicitation, supplier selection, contract administration, and contract closeout	Prerequisites: A grade of C or better in TQM240 or permission of Instructor.	LEC 2.0 2.0 2.0
MGT242AA	Project Scope Management	Concepts of scope change management, including how a project's scope is planned, defined, and verified	Prerequisites: A grade of C or better in TQM240 or permission of Instructor.	LEC 1.0 1.0 1.0
MGT243	Project Time and Cost Management	Time management and cost management in a project environment, including activity definition, sequencing and duration estimating. Schedule development and specific tools to support schedule creation and control. Project cost management including resource planning, cost estimation, cost budgeting, and cost control	Prerequisites: A grade of C or better in TQM240 or permission of Instructor.	LEC 2.0 2.0 2.0
MGT244	Project Risk and Quality Management	Risk management and quality management in a project environment, including risk identification, risk aversion, and risk response planning. Presents techniques to perform risk analysis and risk response planning on projects. Concepts of quality management including quality planning, quality assurance and quality control. Concepts of quality systems and their applicability to project management	Prerequisites: None.	LEC 2.0 2.0 2.0
MGT245	Project, Human Resources and Communications Management	Concepts of human resource management and communications management in a project environment, including project organizational planning, staff acquisition and team development. Concepts of project communications planning, information distribution, performance reporting, and project closeout	Prerequisites: None.	LEC 2.0 2.0 2.0



MGT246	Principles of Project Management	Project Management principles expected of a Project Management Professional (PMP). Includes an overview of exam format, topics, and study techniques. Focus is on project scope, procurement, time, risk, cost, quality, human resource, communication, and integration management	Prerequisites: A grade of C or better in TQM240 or permission of Instructor.	LEC 3.0 3.0 3.0
MGT251	Human Relations in Business	Analysis of motivation, leadership, communications, and other human factors. Cultural differences that may create conflict and affect morale individually and within organizations.	Prerequisites: None. MGT101 or MGT175 or MGT229 suggested but not required.	LEC 3.0 3.0 3.0
MGT253	Owning and Operating a Small Business	Starting, organizing, and operating a small business, including location, finance management processes, advertisement and promotion, credit, inventory control and ethics	Prerequisites: None.	LEC 3.0 3.0 3.0
MGT259	Management Seminar	Classroom portion of the management internship experience, including student development of specific job-related objectives to be accomplished at the work site. Exploration of general business and specific work-related topics in a seminar setting.	Prerequisites: Permission of Department or Division. Corequisites: MGT260AA.	LEC 1.0 1.0 1.0
MGT260AA	Management Internship	Laboratory portion of management seminar course. Fifteen hours weekly. Supervised and evaluated by internship coordinator.	Prerequisites: Permission of Departmental or Division. Corequisites: MGT259.	LAB 3.0 15.0 0.0
MGT270AA	Management Internship	Management work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 0.0
MGT270AB	Management Internship	Management work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 2.0 2.0 0.0
MGT270AC	Management Internship	Management work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 0.0

MGT275	Office Management and Procedures	Covers basic administrative office services and systems, including analysis and management of operations, information systems, human resources, and facilities design.	Prerequisites: None. MGT175 or MGT229 suggested but not required.	LEC 3.0 3.0 3.0
MGT276	Personnel/Human Resources Management	Human resource planning, staffing, training, compensating, and appraising employees in labor management relationships.	Prerequisites: None. MGT101 or MGT175 or MGT229 suggested but not required.	LEC 3.0 3.0 3.0
MGT277	Labor Relations	Covers the historical, legal, and environmental parameters surrounding current labor/management relations, including contract negotiations and grievance procedures.	Prerequisites: None. MGT101 or MGT175 or MGT229 suggested but not required.	LEC 3.0 3.0 3.0
MGT286	Human Resource Employment Management	Techniques and methodology for coordinating and monitoring effective employment selection practices. Includes description of employment functions, staffing analysis, employment recruitment and advertising, applicant screening, interviewing and reference checking, employee selection and placement within a human resources division	Prerequisites: A grade of C or better in MGT276 or permission of Department or Division.	LEC 3.0 3.0 3.0
MGT289	Professional in Human Resources Test Preparation	Preparation for testing for Professional in Human Resources (PHR) certification. Includes responsibilities of the PHR in the development, implementation and management of budgets, workforce planning and employee training. Also covers compensation and employee relations issues and responsibilities.	Prerequisites: None.	LEC 3.0 3.0 3.0

MGT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
MGT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
MGT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

MGT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MGT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MGT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MHL130	Herstory: Women in Popular Music	Overview of the contributions made by women in the evolution of popular music and its industry	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL140	Survey of Music History	Study of composers, compositions, styles, and periods in music history.	Prerequisites: None.	LEC 3.0 3.0 3.0

MHL143	Music in World Cultures	Non-European musical traditions including the study of music in rituals, musical instruments and the impact of cultures on musical styles	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL145	American Jazz and Popular Music	The study of cultural and social contributions to the evolution of American jazz and popular music from the mid-1800's to present.	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL146	Survey of Broadway Musicals	Survey of Broadway musicals traced from their origins to the present viewed in their cultural, political, and socio-economic contexts. Emphasis on stylistic periods, composers, lyricists, directors, and choreographers	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL147	Music of African-American Cultures	African-American music traced from its origin in Africa to the present. Includes spirituals, blues, gospel, jazz, and classical style.	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL149	Traditional Irish Music	History and culture of traditional Irish music: instruments, styles, training, musical elements, performance venues, related arts and principal proponents of the music. Examines the musical culture of Ireland in the context of contemporary world music issues and the preservation of the tradition.	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL153	Rock Music and Culture	History of Rock music and how cultural, social, political, and economic conditions have shaped its evolution.	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL155	Survey of American Music	History of the music of North America from the earliest American Indian music to the present. Introduction to the musical trends, composers, socioeconomic developments and trends, musical forms and styles that influence our modern American musical sense.	Prerequisites: None.	LEC 3.0 3.0 3.0

MHL156	Music in Latin America and the Caribbean	To discuss the role of music in Latin and Caribbean cultures and the impact of these cultures on music. To present a historical survey to the evolution and development of musical styles from rumba to reggae. Among the topics, and to include: origins, gender, race, ethnicity, politics, elements of music, instruments, both sacred and secular music, and significant individuals influencing the evolution of many different genres of music in Latin America and Caribbean cultures	Prerequisites: None.	LEC 3.0 3.0 3.0
MHL194	Music and Culture	Introduction to the study of multicultural music in its social, cultural, historical and economic contexts. Performance of music using percussion, rhythm, and the human body. Historical and social aspects of global cultures' musical expressions.	Prerequisites: A grade of C or better in (MTC105 and MTC106) or permission of Instructor.	LEC 3.0 3.0 3.0
MHL204	Hip-Hop Music and Culture	A history of Hip-Hop's musical and artistic elements and how cultural, social, political, and economic conditions have shaped its evolution.	Prerequisites: A grade of C or better in ENG101, or ENG107, or permission of Instructor.	LEC 3.0 3.0 3.0
MHL241	Music History and Literature to 1750	In-depth study of music history from the primitive era through the Baroque period.	Prerequisites: A grade of C or better in MTC155 and MTC156 or Corequisites: MTC155 and MTC156 or permission of Instructor.	LEC 3.0 3.0 3.0
MHL242	Music History and Literature 1750 to Present	In-depth study of music history from the Classical period through the Contemporary period	Prerequisites: A grade of C or better in MHL241 or permission of Instructor.	LEC 3.0 3.0 3.0
MHL295	Topics in Music	Exploration of selected topics in music. Focuses on a theme, era, genre, concept, or critical approach. Analysis and interpretation of topic's representation, development, and significance in a variety subjects related to music humanities. Includes reading, listening analysis and interpretation of music and musical texts.	Prerequisites: A grade of C or better in ENG101, or ENG107, or permission of Instructor.	LEC 3.0 3.0 3.0

MHL298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MIC101	Fundamentals of Healthcare Interpreting	This course introduces the field of interpreting, interpretation models, cognitive processes associated with interpretation, professional ethical standards, employment opportunities, bilingual customer service, and working conditions. Topics include pronunciation, medical vocabulary, resources, legal issues, code of ethics, standards of practice, certification, interpreter assessments/qualifications, and protocol associated with various settings. Upon completion, students should be able to interpret English/Spanish and Spanish/English simulated health care encounters, explain how to prepare for and manage an interpreted encounter, and apply ethical standards to a variety of working situations.	Prerequisites: None.	80

MIC103	Medical and Clinical Development	Basic anatomy and physiology, medical terminology in Spanish and English for health care settings. Emphasis on pronunciation of commonly used medical abbreviations for medical specialists and branches of medicine. Students will analyze, define and correctly spell medical terms and abbreviations. Systems to be covered are: cardiovascular, respiratory, digestive, musculoskeletal, genitourinary, endocrine, immune, and nervous. Common test procedures for each system, cancer and first response interpretation roles will also be covered. Students also participate in activities to prepare for externships, including a review of professional conduct, dress code, bilingual customer service and downtime activities.	Prerequisites: MIC101 (within three years) or with Program Manager approval.	80
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MIC104	Medical Spanish/English Interpreting	<p>This course covers Spanish/English interpreting in a medical context and setting. The course introduces the field of interpreting, interpretation models, cognitive processes associated with interpretation, professional ethical standards, bilingual customer service and working conditions. Students will focus on pronunciations, medical terminology, resources, legal issues, code of ethics, standards of practice, certification requirements, interpreter assessments/qualifications and protocol associated with various settings. Students will also focus on review of professional conduct and first response interpretation. Upon completion, students should be able to interpret English/Spanish and Spanish/English simulated health care encounters, explain how to prepare for and manage an interpreted encounter, and apply ethical standards to a variety of settings. This course is designed and aligned with the purpose of preparing students to take the Certification Commission for Healthcare Interpreters (CCHI) certification exam and earn their CCHI certification.</p>	Prerequisites: Program admission.	80
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MIC105	Medical Interpreter: Professional Externship	Practical training and application of healthcare interpreting under direct supervision of clinical or hospital preceptor. Students may train with staff interpreters or dual-role interpreters. Documentation of daily interpreter attendance logs and a satisfactory performance evaluation are required to successfully complete the externship. Students must meet the clinical facilities requirements prior to beginning. Externship hours will vary and students are expected to travel and have reliable transportation.	Prerequisites: MIC101 and MIC103 (within three years) or with Program Manager approval.	40
MIS101	Introduction to the United States Army	Introduces the personal challenges and competencies that are critical for effective leadership and communication. Students learn how the personal development of life skills such as cultural understanding, goal setting, time management, stress management and comprehensive fitness relate to leadership, officership and the Army profession. Focuses on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining an understanding of the Army ROTC program, its purpose in the Army, and its advantages for the student. Includes physical training assessments, tactical training, as well as lecture-based instruction.	Prerequisites: None.	LEC 4.0 3.0 0.0 LAB 0.0 2.0 0.0

MIS102	Foundation of Agile and Adaptive Leadership	Introduces the professional challenges and competencies that are needed for effective execution of the profession of arms and Army communication. Through this course, students learn how ethics and values shape the Army and the specific ways that these ethics are inculcated into Army culture. Explores the seven Army values and the warrior ethos, investigate the profession of arms and Army leadership as well as an overview of the Army, and gains practical experience using critical communication skills. Includes physical training assessments, tactical training, as well as lecture-based instruction.	Prerequisites: A grade of C or better in MIS101.	LEC 4.0 3.0 0.0 LAB 0.0 2.0 0.0
MIS201	Army Leadership and Decision Making	Academically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam and final exam. Also includes physical training assessments, tactical training, as well as lecture-based instruction.	Prerequisites: A grade of C or better in MIS101 and MIS102.	LEC 4.0 3.0 0.0 LAB 0.0 2.0 0.0

MIS202	Army Doctrine and Team Development	Academically challenging course where students study, practice and apply the fundamentals of the leadership, officer skills, Army values and ethics, personal development and tactics at the small-unit level. Focuses on cross-cultural competencies as they relate to Army doctrine and how they apply in a combatant commander's engagement strategies. Stresses Army values, teamwork and warrior ethos and their relationship to the law of land warfare and philosophy of military service. Covers the ability to lead and follow through team building exercises in small units up to squad level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Also includes physical training assessment, tactical training, as well as lecture-based instruction.	Prerequisites: A grade of C or better in MIS101, MIS102 and MIS201.	LEC 4.0 3.0 0.0 LAB 0.0 2.0 0.0
MIT101	Manufacturing Industry Fundamentals	Introduction to the fundamentals of manufacturing technology. Covers topics common to all sectors of manufacturing including safety, quality and continuous improvement, manufacturing processes and production, and maintenance awareness.	Prerequisites: None.	LEC 3.0 3.0 3.0
MIT102	Logistics Technology Fundamentals	Introduction to the fundamentals of logistics technology. Includes topics pertaining to supply chain facilities including factories, warehouses, distribution centers and transporters.	Prerequisites: None.	LEC 3.0 3.0 3.0

MIT106	Industrial Safety	Safety, health management, and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) act, materials handling, electrical safety, machine safety, first response to fire and medical emergencies, safety signs and color codes, recognition of safety and health hazards accident prevention, management responsibilities, and OSHA 10 certification.	Prerequisites: None.	LEC 2.0 2.0 2.0
MIT112	Natural Gas Pipeline Operations	Introduction to the fundamentals of the natural gas pipeline operations. Includes topics such as damage prevention, emergency response, valve operation, and testing of facilities. This course prepares students for the Non-Joiner Operator Qualification in the natural gas pipeline industry.	Prerequisites: None.	LEC 3.0 3.0 3.0
MIT113	Natural Gas Pipe Joiner	Principles and practices of plastic pipe joining in the natural gas industry. Includes pipe joining techniques such as solvent cements, heat fusions, mechanical saddle fittings, and compression couplings. This course prepares students for Pipe Joiner Qualification in the natural gas industry.	Prerequisites: None.	LEC 3 3 3

MIT120	Industrial Technology Fundamentals	Theories and concepts in industrial technology basics and OSHA 10 certification. Introductory concepts in industrial math, hand and power tools, technical drawings, rigging, and materials handling. Emphasis on communication and employability skills. Included labs emphasize and anchor the course material. Safety and management expectations. Defense in depth strategy and conduct of verifications. Maintenance procedures. Work control process. Performance of work standards and documentation including pre-job preparation, pre-job notification, job review, job verification and job close out specific to nuclear power plant operations.	Prerequisites: None.	L+L 3.0 5.0 5.0
MIT121	Industrial Technology I-A	Principles of Industrial Maintenance Technology. Modules include theory and applications in tools of the trade, fasteners and anchors, oxyfuel cutting, gaskets and packing, technical mathematics, and technical drawings. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT120 or Corequisites: MIT120 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT122	Industrial Technology I-B	Principles of Industrial Maintenance Technology. Modules include theory and applications in pumps and valves, test instruments, rigging, mobile and support equipment, and lubrication. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT120 or Corequisites: MIT120 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT123	Industrial Mechanical Technology II-A	Basic layout, introduction to piping components, copper and plastic piping practices, introduction to ferrous metal piping practices, identifying, installing and maintaining valves, hydrostatic and pneumatic testing, introduction to bearings, and low-pressure steam systems. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT122 or permission of Instructor.	L+L 3.0 5.0 5.0

MIT124	Industrial Mechanical Technology II-B	High pressure steam systems and auxiliaries, distillation towers and vessels, heaters, furnaces, heat exchangers, cooling towers, fin fans, and introduction to tube work. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT122 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT133	Industrial Electrical and Instrumentation Technology II-A	Industrial safety for E and I technicians, introduction to the National Electrical Code, electrical theory, alternating current, electrical and instrumentation test equipment, flow, pressure, level, and temperature. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT122 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT134	Industrial Electrical and Instrumentation Technology II-B	Process mathematics, hand bending, tubing, clean, purge, and test tubing and piping systems, instrument drawings and documents, conductors and cables, and conductor terminations and splices. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT122 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT153	Statistical Techniques in Process Control	Use of statistical tools in fabrication process control, such as, but not limited to, frequency histograms, variable control charts, and attribute control charts. Trends and aspects of quality control	Prerequisites: A grade of C or better in ELT101 or equivalent.	LEC 2.0 2.0 2.0
MIT160	Industrial Mechanical Systems	Introduction to the fundamentals of mechanical components and systems. Topics include the theory, construction and operation of mechanical components and systems such as valves, pumps, compressors, heat exchangers, diesel engines, steam systems, HVAC and refrigeration systems.	Prerequisites: A grade of C or better in MIT120 or MAT090 or MAT091 or MAT092 or completion of higher level math course or satisfactory score on math placement exam or permission of Department or Division.	LEC 3.0 3.0 3.0

MIT161	Mechanical Drive Systems	Principles and practices of mechanical drive systems used in industry. Topics cover the proper installation, troubleshooting, repair and maintenance techniques of belt drives, chain drives, and gear drives.	Prerequisites: A grade of C or better in MIT120 or MAT090 or MAT091 or MAT092 or completion of higher level math course or satisfactory score on math placement exam or permission of Department or Division.	LEC 3.0 3.0 3.0
MIT162	Industrial Hydraulics	Principles and practices of hydraulic systems used in industry. Topics cover the proper installation, troubleshooting, repair, and maintenance techniques of hydraulic components and systems.	Prerequisites: A grade of C or better in MIT120 or MAT090 or MAT091 or MAT092 or completion of higher level math course or satisfactory score on math placement exam or permission of Department or Division.	LEC 3.0 3.0 3.0
MIT163	Industrial Pneumatics	Principles and practices of pneumatic systems used in industry. Topics cover the proper installation, troubleshooting, repair, and maintenance techniques of pneumatic components and systems.	Prerequisites: A grade of C or better in MIT120 or MAT090 or MAT091 or MAT092 or completion of higher level math course or satisfactory score on math placement exam or permission of Department or Division.	LEC 3.0 3.0 3.0
MIT185	Electromechanical Devices	Theory and application of control circuits used to control mechanical devices such as, but not limited to, alternating current (AC) and direct current (DC) motors, stepper motors, mechanical drive systems, servomechanisms	Prerequisites: A grade of C or better in ELT113 or permission of Department or Division.	L+L 3.0 5.0 5.0



MIT209	Automated Manufacturing	Evolution of automation in manufacturing from fixed (hard) automation to Computer Integrated Manufacturing (CIM) is presented with numerical control (NC) ; computer-aided design/computer-aided manufacturing (CAD/CAM); automated material handling; automation communication protocol. Manufacturing management strategies include statistical process control (SPC); material requirements planning (MRP); manufacturing resource planning (MRPII); and just-in-time (JIT). Hands-on experience with programmable logic controllers (PLC) and robotics included	Prerequisites: A grade of C or better in ELT131 or ELE131 or GTC/MET206 or equivalent.	L+L 3.0 6.0 6.0
MIT221	Industrial Mechanical Technology III-A	Advanced trade math, precision measuring tools, installing bearings, and installing couplings. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT124 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT222	Industrial Mechanical Technology III-B	Setting baseplates and prealignment, conventional alignment, installing belt and chain drives, and installing mechanical seals. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT124 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT223	Industrial Mechanical Technology IV-A	Preventive and predictive maintenance, advanced blueprint reading, compressors and pneumatic systems, and introduction to supervisory skills. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT222 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT224	Industrial Mechanical Technology IV-B	Reverse alignment, laser alignment, troubleshooting and repairing pumps, and troubleshooting and repairing gearboxes. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT222 or permission of Instructor.	L+L 3.0 5.0 5.0

MIT231	Industrial Electrical and Instrumentation Technology III-A	Hazardous locations, electronic components, electrical and instrumentation drawings, motor controls, distribution equipment, transformer applications, and conductor selection and calculation. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT134 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT232	Industrial Electrical and Instrumentation Technology III-B	Temporary grounding, layout and installation of tubing and piping systems, machine bending of conduit, hydraulic controls, pneumatic controls, motor-operated valves. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT134 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT233	Industrial Electrical and Instrumentation Technology IV-A	Standby and emergency systems, basic process control elements, transducers and transmitters, instrument calibration and configuration, pneumatic control valves, actuators, and positioners. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT232 or permission of Instructor.	L+L 3.0 5.0 5.0
MIT234	Industrial Electrical and Instrumentation Technology IV-B	Performing loop checks, troubleshooting and commissioning a loop, process control loops and tuning, data networks, programmable logic controllers, and distributed control systems. Included labs emphasize and anchor the course material.	Prerequisites: A grade of C or better in MIT232 or permission of Instructor.	L+L 3.0 5.0 5.0
MKT101	Introduction to Public Relations	Emphasizes public relations techniques used both within and outside the business organization, including operation of a PR counseling firm	Prerequisites: None.	LEC 3.0 3.0 3.0
MKT109	Introduction to Fashion Merchandising	Explores the various levels and specialized segment of the fashion industry, the principles of fashion, the fundamentals of merchandising apparel, consumers' influence on demand and marketing activities.	Prerequisites: None.	LEC 3 3 3

MKT110	Marketing and Social Networking	Theory and practice in the use of social media in marketing. Topics may include a history of social media, preparation for social marketing, the power of collective influence, and how to engage with social media. Reviews social mediums, social networks, platforms and other marketing tools used to create a social media campaigns.	Prerequisites: None.	LEC 3.0 3.0 3.0
MKT111	Applied Marketing and Social Networking	Examination of the strategic use of digital and social media marketing platforms and tools for global communication and networking, including analysis of various digital and social media platforms and tools for developing brands, creating professional networks and creating engaging content. Hands-on use of social media platforms and tools to conduct research, develop strategies for creating, integrating, and evaluating social media marketing campaigns, and development of metrics to measure effectiveness.	Prerequisites: A grade of C or better in MKT110.	L+L 3.0 4.0 4.0
MKT112	Retail Customer Service	Introduction to the field of retail sales. Emphasis on customer service and sales techniques	Prerequisites: None.	LEC 1.0 1.0 1.0
MKT114	Retail Inventory Control	Retail inventory control procedures. Emphasis on the role of the professional sales associate within a retail company and in the handling of merchandise	Prerequisites: A grade of C or better in MKT112.	LEC 1.0 1.0 1.0
MKT151	Display and Visual Merchandising	An examination of the principles of design including line, color, balance, and texture as they relate to the display of merchandise. Participation in displays, field trips, and individual projects	Prerequisites: None.	L+L 3.0 4.0 4.0
MKT200	Retail Buying	Examines management/buyer role in investment, pricing, planning, controlling sales and inventories Any BPC/CIS spreadsheet course recommended	None Any BPC/CIS spreadsheet course recommended.	LEC 3.0 3.0 3.0

MKT210	Applied Marketing Strategies	Examines the principles and terminology utilized in the marketing function and their value and application in the day-to-day operation of a business. Focuses on marketing planning, market segmentation, positioning, targeting and aspects of international marketing. Reviews product development, pricing, promotion and distribution and explores careers in marketing	Prerequisites: None.	L+L 3.0 3.0 3.0
MKT263	Advertising Principles	Introduces the advertising function within business, including media study, creative strategies, and advertising campaigns MKT271 suggested, but not required.	Prerequisites: None. MKT271 suggested but not required.	LEC 3.0 3.0 3.0
MKT267	Principles of Sales	Analyzes and applies the steps and techniques used in personal selling. Highlights the role of the professional sales representative and his/her functions as they relate to the company's mission and customer expectations.	Prerequisites: None.	LEC 3.0 3.0 3.0
MKT268	Merchandising	Surveys structure and operation of retail organizations. Emphasizes merchandising to include price, location, time promotion and quantity.	Prerequisites: None. MKT271 suggested but not required.	LEC 3.0 3.0 3.0
MKT271	Principles of Marketing	An analysis of the marketing process and environment with regard to the product, pricing, distribution, and communication in order to satisfy buyer needs	Prerequisites: None.	LEC 3.0 3.0 3.0
MKT273	Marketing Research	Planning and preparing for a marketing research effort and presentation of research findings in a professional manner. Includes the study of problem definition, sampling methods, statistical analysis, presentation techniques, and evaluation of data	Prerequisites: A grade of C or better in MKT271 or permission of Instructor.	LEC 3.0 3.0 3.0

MKT274AC	Fashion Merchandising Study Tour	A tour of the fashion merchandising industry outside the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance awareness of this multifaceted career	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 3.0
MKT277	Advanced Sales	Advanced selling and communication techniques.	Prerequisites: A grade of C or better in MKT267 or permission of Department or Division.	LEC 3.0 3.0 3.0
MKT280AA	Marketing Internship	Marketing work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 0.0
MKT280AB	Marketing Internship	Marketing work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 2.0 2.0 0.0
MKT280AC	Marketing Internship	Marketing work experience in a business or industry. 80 hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 0.0
MKT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

MKT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
MKT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MKT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

MKT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MKT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MKT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

MMT140	Survey of Multimedia Technology	Introduction to multimedia technology and its uses. Overview of the various hardware and software used in developing and delivering multimedia. Emphasis on how multimedia is used in education and training. Provides a basic understanding of the process used to define and develop multimedia applications	Prerequisites: A grade of C or better in CIS105 or permission of Instructor.	L+L 2.0 3.0 3.0
MMT180AL	Designer Tools: Character Studio	Character Studio 3D-Character Animation software. Character motion, editing and blending electronic with traditional techniques.	Prerequisites: A grade of C or better in ART100 and ADA/ART/MMT184. ART116 is recommended but not required.	L+L 2.0 5.0 5.0
MMT184	Digital Animation I	The art of animation (animated sequences, special effects, titles, etc.) using the computer. Construction characters, background graphics, color, scaling, storyboard, cells, timing, editing, and surface rendering. Screening and discussion of selected animated short films and videos.	Prerequisites: A grade of C or better in (ART111 or ART116) or permission of Instructor. Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
MMT185	3D Modeling for Animation I	Basic concepts of 3D modeling. Anatomy of computer geometry; basic elements that make computer models-curves, surfaces, nurbs, and polygons. 3D translation, shading, materials, and rendering.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: ART100 or permission of Instructor.	L+L 3.0 6.0 6.0
MMT186	Modeling for Digital Media	Development of 3-D models for multimedia productions. 3-D logos, objects, and advanced animation projects using special effects.	Prerequisites: A grade of C or better in ADA/ART/MMT184 or permission of Instructor.	L+L 3.0 6.0 6.0



MMT190	Art of Web Site Design	Introduction to design production for websites. Layout, typography and presentation style for HTML (Hyper Text Markup Language). Design of mock-ups using digital design software to produce artistic form and content for the Web using Hyper Text Markup Language (HTML), digital text, and graphics. Discussion of color, proportion, typography and Web-specific design principles. Emphasizes design of cross-browser compatible interfaces that optimize usability, accessibility and browser interoperability.	Prerequisites: A grade of C or better in ART100, or permission of Instructor. CIS133DA recommended.	L+L 3.0 6.0 6.0
MMT190AA	Art of Website Design I	Introduction to design production for websites. Layout, typography and presentation style for HTML (Hyper Text Markup Language). Design of mock-ups using digital design software to produce artistic form and content for the Web using Hyper Text Markup Language, digital text, and graphics.	Prerequisites: A grade of C or better in ART100, or permission of Instructor. CIS133DA recommended.	L+L 1.0 2.0 2.0
MMT191	Storyboarding and Layout	Introduction to storyboarding including film storytelling and scene presentation.	Prerequisites: A grade of C or better in ART111 or ART187 or ART188.	L+L 2.0 4.0 4.0
MMT216	Multimedia Project Management	Interactive video and multimedia project management including defining, analyzing, designing, and validating interactive/multimedia applications; building and managing development and production teams; planning, budgeting, and scheduling; interactive/multimedia authoring; project implementation; and writing RFPs (Request For Proposal).	Prerequisites: None.	L+L 3.0 6.0 6.0

MMT285	3D Modeling and Animation II	Advanced techniques for 3D modeling and computer animation. Creating and applying 2D background and 3D model textures, creating and applying special effects to models and animation, designing, modeling, and animating a digital 3D character from a character study.	Prerequisites: A grade of C or better in ART/MMT185.	L+L 3.0 6.0 6.0
MMT292	Multimedia Update	Exploration and comparative analysis of the newest hardware and software products and packages on the market designed to enhance or replace existing multimedia technology.	Prerequisites: A grade of C or better in (CIS/MMT140 and CIS141 any module) or permission of Instructor.	L+L 1.0 2.0 2.0
MMT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MMT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

MMT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MNT110	General Principles of Nanotechnology	Designed to provide students with a strong fundamental understanding of the scientific principles, processing, and applications of nanotechnology. Includes the concepts of chemical bonding, quantum mechanics, and microstructure applied to various nanomaterials and their use in electronic devices, composites, computing, and various other biological, medical, energy-related, and current consumer applications. Introduces analytical techniques used in nanotechnology, as well as possible societal applications.	Prerequisites: A grade of C or better in (MAT090 or MAT091 or MAT092 or MAT112 or equivalent) and CHM130 or equivalent.	LEC 3.0 3.0 3.0
MNT120	Introduction to Micro Electro-Mechanical Systems	Overview of fundamentals of the scientific principles, processing, and applications of micro electro-mechanical systems. Covers topics in applications, fabrication methods, characterization, and commercialization concepts as well includes surface micromachining, patterning, etching and deposition processes in addition to cleanroom protocol and safety. Also covers research and documentation types and applications.	Prerequisites: None.	L+L 3.0 4.0 4.0

MNT201	Materials, Safety, and Equipment for Nanotechnology	Safety procedures and equipment used in the nanotechnology industry. Covers chemical, biological, and energy safety protocol as well as infrastructure facilities and systems. Also includes an overview of the structural, chemical and physical classification of materials.	Prerequisites: None.	L+L 3.0 4.0 4.0
MNT210	Basic Nanotechnology Processes	Introduction to basic nanotechnology processes and a comparison of top-down and bottom-up manufacturing processes. Covers characteristics of plasma and its application to additive and subtractive processes. Also includes basic pattern transfer processes, laser ablation, and chemical and physical vapor deposition.	Prerequisites: None.	L+L 3.0 4.0 4.0
MNT220	Materials in Nanotechnology	Examination of material used in the field of nanotechnology. Covers colloids, nanoparticles, oxides, and quantum dots in addition to self-assembly applications. Also includes biocompatibility and the dry etch material fabrication process.	Prerequisites: None.	L+L 3.0 4.0 4.0
MNT230	Patterning for Nanotechnology	Overview of patterning processes in nanotechnology. Includes photolithography techniques, technology, and tools. Covers photoresist applications and unique lithography techniques, including block polymer patterning.	Prerequisites: None.	L+L 3.0 4.0 4.0
MNT240	Nanotechnology Applications	An introduction to the practical application of emerging technologies in nanoscience. Includes applications for health sciences, energy, manufacturing, electronics, the food industry, and the environment.	Prerequisites: None.	L+L 3.0 4.0 4.0

MNT250	Characterization of Nanotechnology Structures and Materials	Overview of characterization tools and techniques for nanotechnology structures and materials. Includes in-situ and ex-situ characterization as well as procedures for light, physical and electron beam characterization. Also includes tools and processes for advanced Scanning Probe Microscopy (SPM) and surface analysis.	Prerequisites: None.	L+L 3.0 4.0 4.0
MPT101	Technical Documentation	Analysis and interpretation of technical drawings (prints) common to manufacturing. Mathematical calculations for determining dimensions. Introduction and application of Geometric Dimensioning and Tolerancing (GD&T).	Prerequisites: None.	L+L 3.0 5.0 5.0
MPT101MP	Technical Documentation	Analysis and interpretation of technical drawings (prints) common to manufacturing. Mathematical calculations for determining dimensions. Introduction and application of Geometric Dimensioning and Tolerancing (GD&T).	Prerequisites: None.	LEC 3.0 1.0 1.0 LAB 0.0 4.0 4.0
MPT110	Inspection Techniques	Setup and use of inspection tools and equipment per current industry standards. Selection, completion and interpretation of information from inspection forms.	Prerequisites: None.	L+L 3.0 5.0 5.0
MPT110MP	Inspection Techniques	Setup and use of inspection tools and equipment per current industry standards. Selection, completion and interpretation of information from inspection forms.	Prerequisites: None.	LEC 3.0 1.0 1.0 LAB 0.0 4.0 4.0
MPT111	Geometric Dimensioning and Tolerance (GDT)	Controls of geometric dimensioning and tolerance (GDT) including the form, orientation, profile and location. Includes qualifying controls per engineering documentation for the American Society of Mechanical Engineers (ASME) Y14.5 2009 Standard.	Prerequisites: None.	L+L 3.0 5.0 5.0

MPT111MP	Geometric Dimensioning and Tolerance (GDT)	Controls of geometric dimensioning and tolerance (GDT) including the form, orientation, profile and location. Includes qualifying controls per engineering documentation for the American Society of Mechanical Engineers (ASME) Y14.5 2009 Standard.	Prerequisites: None.	LEC 3.0 1.0 1.0 LAB 0.0 4.0 4.0
MPT113	Coordinate Measuring Machines I	Fundamentals and general aspects of coordinate measuring machines (CMM). Basic measuring techniques and operation, including conformance to geometric dimensioning and tolerancing requirements using both manual and programmable (automatic) coordinate measuring machines.	Prerequisites: A grade of C or better in (MPT101 or MPT101MP) and (MPT110 or MPT110MP).	L+L 3.0 4.0 4.0
MPT120	Introduction to Manual Machining	Introduces manual machining operations related to drilling, grinding, sawing, milling, and lathe processes. Development of fundamental skills, practices and safety applications in working with manual machine tools, hand tools, and related equipment common to manufacturing. Provides theoretical and practical experiences related to the machining of various material types to produce a product to industry standards.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: (MPT101 or MPT101MP) and (MPT111 or MPT111MP).	L+L 4.0 6.0 6.0
MPT120MP	Introduction to Manual Machining	Introduces manual machining operations related to drilling, grinding, sawing, milling, and lathe processes. Development of fundamental skills, practices and safety applications in working with manual machine tools, hand tools, and related equipment common to manufacturing. Provides theoretical and practical experiences related to the machining of various material types to produce a product to industry standards.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: (MPT101 or MPT101MP) and (MPT111 or MPT111MP).	LEC 4.0 2.0 2.0 LAB 0.0 4.0 4.0

MPT130	CNC Machine Operator	Designed to provide a fast track to fundamental knowledge and skills necessary for entry-level machine operator positions. Introduction to print reading, inspection, and safe start-up and operation of multi-axis Computer Numerical Control (CNC) machines. Topics include two- and three-axis program interpretation and application, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: None.	L+L 6.0 10.0 10.0
MPT130MP	CNC Machine Operator	Designed to provide a fast track to fundamental knowledge and skills necessary for entry-level machine operator positions. Introduction to print reading, inspection, and safe start-up and operation of multi-axis Computer Numerical Control (CNC) machines. Topics include two- and three-axis program interpretation and application, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: None.	LEC 6.0 3.0 3.0 LAB 0.0 7.0 7.0
MPT131	CNC Machining Level I	Introduction to safe start-up and operation of multi-axis Computer Numerical Control (CNC) machines. Topics include two- and three-axis program interpretation and application, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: A grade of C or better in MPT120 or MPT120MP.	L+L 6.0 10.0 10.0
MPT131MP	CNC Machining Level I	Introduction to safe start-up and operation of multi-axis Computer Numerical Control (CNC) machines. Topics include two- and three-axis program interpretation and application, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: A grade of C or better in MPT120 or MPT120MP.	LEC 6.0 3.0 3.0 LAB 0.0 7.0 7.0

MPT132	CNC Machining Level II	Safe setup and operation of multi-axis Computer Numerical Control (CNC) machines. Topics include multi-axis programming, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: A grade of C or better in MPT130 or MPT130MP or MPT131 or MPT131MP.	L+L 3.0 5.0 5.0
MPT132MP	CNC Machining Level II	Safe setup and operation of multi-axis Computer Numerical Control (CNC) machines. Topics include multi-axis programming, qualifying tooling, and tool offsets to produce a product to industry standards.	Prerequisites: A grade of C or better in MPT130 or MPT130MP or MPT131 or MPT131MP.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
MPT140	Manual CNC Programming	Introduction to Manual Computer Numerical Control (CNC) programming of Word Address Language (G&M Code) for CNC machine tools. Multi-axis CNC programming for CNC controlled machines. Computer based tool path verification, CNC controller tool path verification and CNC machine tool program verification.	Prerequisites: A grade of C or better in (MPT130 or MPT130MP) or (MPT131 or MPT131MP) or machine shop experience or permission of Program Director.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
MPT150	Introduction to SolidWorks	Introduction to CAD modeling, solid part generation, assembly of parts, and working drawing creation. Applications of CAD/CAM in Computer Integrated Technology (CIM).	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
MPT151	Solid Design I: SolidWorks	Introduction to solid modeling and parametric design of mechanical components. Use of SolidWorks commands. Creation of single part in two-dimensional (2D) sketch, three-dimensional (3D) solid. Feature based components and feature associativity. Initial preparation for the Certified Solid Works Associate (CSWA) exam.	Prerequisites: A grade of C or better in (MPT101 or MPT101MP) and (MPT111 or MPT111MP).	L+L 3.0 5.0 5.0



MPT152	Solid Design: Certified SolidWorks Associate/Certified SolidWorks Professional Test Preparation	Preparation for latest Certified SolidWorks Associate (CSWA) or Certified SolidWorks Professional (CSWP) exam. Includes exam objectives, Solid Design, assemblies, COSMOSXpress and technical documentation in current version.	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0
MPT213	Coordinate Measuring Machines II	Advanced techniques and operation of Coordinate Measuring Machine (CMM). Includes alignments, Computer Aided Design (CAD) use, program control, scanning, and dimensioning. Offline programming for operation of CMM. Conformance to geometric dimensioning and tolerancing and manufacturing documentation. Implementation of measurement strategies and time-saving techniques for creating measurement routines.	Prerequisites: A grade of C or better in MPT113.	L+L 3.0 4.0 4.0
MPT214	3D Scanning and Reverse Engineering: Geomagic	Principles of digital 3D Scanning and reverse engineering. Data acquisition of organic and mechanical components. Transformation of data into solid model geometry to create parts of equal or superior quality for machining or 3D printing.	A grade of C or better required in all Prerequisites. Prerequisites: MPT113. Prerequisites or Corequisites: MPT151.	L+L 3.0 5.0 5.0
MPT215	Workplace Quality Systems	History of quality systems and procedures. Benefits of ISO 9000 procedures. The twenty elements of ISO 9000. Components and requirements of the International Organization for Standardization (ISO) 9000 quality and periodic audits.	Prerequisites: None.	L+L 3.0 3.0 3.0
MPT216	Applied Statistical Process Control Methods	Identification of quality characteristics derived from variable and attribute data. Usage of statistical rules for interpretation of control charts. Analysis and recommendation of appropriate actions on factors affecting process variation.	Prerequisites: A grade of C or better in MPT215.	L+L 3.0 4.0 4.0

MPT217	Lean and Six Sigma Applied Concepts	Lean manufacturing and Six Sigma methodologies and application to an organization. Identification of waste and application of cost to poor quality process within an organization. Quality System tools and implementation. Emphasis on organizational buy in.	Prerequisites: A grade of C or better in MPT215 or permission of Program Director.	L+L 3.0 3.0 3.0
MPT218	Advanced Quality Process Methods	High-level quality improvement process applied to manufacturing. Specific emphasis on experimental methods focused on waste reduction and general quality and process improvement. Understanding key process variables and decision-making methods based on established procedures. Applying statistical methods to process improvement.	Prerequisites: A grade of C or better in MPT101, MPT110, MPT111, and MPT113.	L+L 3.0 4.0 4.0
MPT220	Manual Machining: NIMS Level I Certification	Preparation for latest National Institute for Metalworking Skills (NIMS) Machining Level I certification in Drill Press, Manual Milling, Turning, and Grinding.	Prerequisites: A grade of C or better in MPT120 or MPT120MP.	L+L 6.0 6.0 6.0
MPT221	Manual Machining: NIMS Level II Certification	Preparation for current National Institute for Metalworking Skills (NIMS) Machining Level II certification in Manual Milling, Turning, and Grinding.	Prerequisites: A grade of C or better in MPT220 or Level I NIMS Certifications in: Drill Press, Lathe Between centers, Lathe Chucking, Mill, and Surface Grinding.	L+L 3.0 5.0 5.0
MPT250	Solid Design II: Advanced Part Modeling: SolidWorks	Creating mechanical assemblies using SolidWorks design tools. Advanced feature tools including constraints and motion. Skill enhancement in the creation of advanced assemblies and part design, standard and advanced mates, and performing mass properties analysis.	Prerequisites: A grade of C or better in MPT151 or permission of Instructor.	L+L 3.0 5.0 5.0

MPT251	Solid Design: Documentation/GD&T: SolidWorks	Creation of engineering drawings. Parts and assemblies using associative mechanical design software. Principles and applications presented in accordance with the American Society of Mechanical Engineers (ASME) Y14. series of standards. Drawing sheets and templates, views, projections, dimensions and annotations, Geometric Dimensioning and Tolerancing (GD&T), assembly drawings, Bill of Materials (BOM), and assembly configurations.	Prerequisites: A grade of C or better in MPT151.	L+L 3.0 5.0 5.0
MPT252	Solid Design: Simulation: SolidWorks	Principles of Finite Element Analysis (FEA), stress and gap analysis, and the Finite Element Method (FEM). Application of fixtures, loads, and connections to assemblies and models. Conducting static and dynamic simulation studies. Evaluation of simulation results and determination of Factor of Safety (FOS).	Prerequisites: A grade of C or better in MPT250.	L+L 3.0 5.0 5.0
MPT253	Solid Design: Surface Modeling: SolidWorks	Creation and manipulation of freeform shapes and surfaces using SolidWorks mechanical design software. Surface body design using 3D sketch geometry and solid features. Verification of surface integrity and quality.	Prerequisites: A grade of C or better in MPT250.	L+L 3.0 4.0 4.0
MPT254	Solid Design: Sheet Metal: SolidWorks	Design of sheet metal parts and assemblies. Creation of sheet metal production drawings. Conversion of solid models to sheet metal. Creation of welded structures with standard structural members using SolidWorks Weldments feature. Design of weld beads and weld joints.	Prerequisites: A grade of C or better in MPT250.	L+L 3.0 4.0 4.0

MPT255	Solid Design 3D Printing	3D printing/additive manufacturing with various additive manufacturing materials. Model orientation for optimal printing and 3D layer slicing, infill control, and orientation. Foundation and support structure design. Fused Deposition Modeling (FDM), Stereolithography Apparatus (SLA), and metal 3D printing.	Prerequisites: A grade of C or better in ((MPT111 or MPT111MP) and MPT250), or permission of Instructor.	L+L 4.0 5.0 5.0
MPT260	Computer Aided Manufacturing (CAM) I	Introduction to Computer Aided Manufacturing (CAM) system programming for Computer Numerical Control (CNC) machines using computer graphics for programming and tool path geometry. Computer programming for simultaneous 3-axis CNC machines, fourth and fifth positioning machining centers, and 2-axis turning centers.	Prerequisites: A grade of C or better in MPT130 or MPT130MP or MPT131 or MPT131MP.	L+L 3.0 5.0 5.0
MPT260MP	Computer Aided Manufacturing (CAM) I	Introduction to Computer Aided Manufacturing (CAM) system programming for Computer Numerical Control (CNC) machines using computer graphics for programming and tool path geometry. Computer programming for simultaneous 3-axis CNC machines, fourth and fifth positioning machining centers, and 2-axis turning centers.	Prerequisites: A grade of C or better in MPT130 or MPT130MP or MPT131 or MPT131MP.	LEC 3.0 1.0 1.0 4.0 4.0
MPT261	MasterCam Certified Programmer Mill Level I: Test Preparation: CPgM1	Review of the latest Certified Programmer Mill Level I (CPgM1) exam in preparation for exam. Competency of geometry construction, tool plane and work plane construction, Computer Numerical Control (CNC), milling tool path generation, and tool path verification with core Mastercam software	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0

MPT262	Computer Aided Manufacturing (CAM) II	Advanced Computer Aided Manufacturing (CAM) system programming for Computer Numerical Control (CNC) machines using computer graphics for programming and tool path geometry. Computer programming for Mill turns and five axis simultaneous machining centers.	Prerequisites: A grade of C or better in MPT260 or MPT260MP.	L+L 3.0 5.0 5.0
MPT262MP	Computer Aided Manufacturing (CAM) II	Advanced Computer Aided Manufacturing (CAM) system programming for Computer Numerical Control (CNC) machines using computer graphics for programming and tool path geometry. Computer programming for Mill turns and five axis simultaneous machining centers.	Prerequisites: A grade of C or better in MPT260 or MPT260MP.	LEC 3.0 1.0 1.0 4.0 4.0
MPT270	Tooling, Fixtures, and Gauges	Various types of tools, fixtures, and gauges and their function as related to manufacturing processes. Clamping and workholding principles as well as use of appropriate hardware.	Prerequisites: A grade of C or better in ((MPT120, or MPT120MP, or four National Institute of Metalworking Skills (NIMS) in CNC Machining or Manual Machining) and (MPT150 or MPT151)), or CAD101, or CAD201, or CAD215, or Certified SolidWorks Associate (CSWA).	LEC 3.0 3.0 3.0
MPT282AA	Volunteerism for Manufacturing: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Program Director.	LAB 1.0 1.0 0.0
MPT282AB	Volunteerism for Manufacturing: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Program Director.	LAB 2.0 2.0 0.0
MPT282AC	Volunteerism for Manufacturing: A Service Learning Experience	Service-learning field experience within private/public agencies and citizen volunteer groups.	Prerequisites: Permission of Program Director.	LAB 3.0 3.0 0.0
MPT290AA	Manufacturing Production Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. Eighty (80) hours of designated work experience.	Prerequisites: Permission of Program Director.	LAB 1.0 6.0 0.0

MPT290AB	Manufacturing Production Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience.	Prerequisites: Permission of Program Director.	LAB 2.0 12.0 0.0
MPT290AC	Manufacturing Production Internship	Construction internship office/field experience with private/public agencies or citizen volunteer groups. Two hundred and forty (240) hours of designated work.	Prerequisites: Permission of Program Director.	LAB 3.0 18.0 0.0
MPT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 1.0 5.0 0.0
MPT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 2.0 10.0 0.0

MPT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 3.0 15.0 0.0
MPT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Prerequisites: Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify) or permission of Instructor. Corequisites: Must be concurrent in at least one class which is related to student's major or career interest or with permission of the Instructor.	LAB 4.0 20.0 0.0
MPT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

MPT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MPT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MRT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



MRT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MRT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MSP101	Orientation to Funeral Service	Designed to orient prospective students to funeral service and its history, philosophy, educational requirements, apprenticeship, licensure examination, job descriptions for funeral directors and embalmers, employment outlook	Prerequisites: None.	LEC 1.0 1.0 1.0
MSP201	History and Sociology of Funeral Service	Survey of history of funeral service from ancient to modern times. Sociological aspects of how various cultures deal with death	Admission to the Mortuary Science Program.	LEC 3.0 3.0 3.0
MSP202	Embalming	Study of the disinfection, preservation and restoration of the deceased human body by chemical means for the specific purpose of funeralization	Admission to the Mortuary Science Program.	LEC 3.0 3.0 3.0 LAB 1.0 2.0 2.0

MSP203	Microbiology for Funeral Service	Survey of the microbiological world as it pertains to the funeral service profession. Knowledge of those organisms that can cause death and safety precautions	Admission to the Mortuary Science Program.	LEC 3.0 3.0 3.0
MSP204	Chemistry for Funeral Service	Basic principles of chemistry related to funeral service. Chemical principles of embalming, disinfection and public health. Sanitation practices regarding potentially harmful chemicals	Admission to the Mortuary Science Program.	LEC 3.0 3.0 3.0
MSP205	Mortuary Administration I	Funeral directing and professional relationships with members of the clergy. Introductory information about the establishment of a funeral home	Admission to the Mortuary Science Program.	LEC 3.0 3.0 3.0
MSP206	Mortuary Administration II	Operation of the established funeral home and product knowledge in the area of funeral service merchandising	Prerequisites: A grade of C or better in MSP205.	LEC 3.0 3.0 3.0
MSP207	Restorative Art	Care and restoration of the deceased human body to create natural form and appearance. Includes anatomical aspects and color theory	Admission to the Mortuary Science program.	LEC 3.0 3.0 3.0 LAB 1.0 2.0 2.0
MSP208	Legal, Regulatory, and Ethical Issues in Funeral Service	Mortuary law regulation by the Federal Trade Commission, and ethical issues in funeral service. Individual State Laws as they pertain to the regulation of funeral establishments and funeral service personnel	Admission to the Mortuary Science program.	LEC 3.0 3.0 3.0
MSP209	Pathology for Funeral Service	Pathologic conditions which require special treatment and terminology associated with the causes of death	Admission to the Mortuary Science program.	LEC 3.0 3.0 3.0
MSP210	Counseling for Funeral Service	Knowledge for facilitating the mourning process after the death of a loved one and for referring bereaved persons to other sources of professional assistance	Admission to the Mortuary Science program.	LEC 2.0 2.0 2.0
MSP211	Compendium for Funeral Service	Analysis of tasks performed on a more-or-less day-to-day basis by funeral service personnel. Capstone experience based on all previous course work.	Prerequisites: Admission to the Mortuary Science program.	LEC 2.0 2.0 2.0

MSP282AA	Service-Learning Experience in Mortuary Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
MSP282AB	Service-Learning Experience in Mortuary Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
MSP282AC	Service-Learning Experience in Mortuary Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
MSP296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
MSP296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

MSP296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MSP296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
MST140	Microsoft Networking Essentials	Emphasis on local area network with overview of wide area networks. Includes terminology, hardware and software components, connectivity, network architecture, packet structure, topologies, communication standards and protocols, and security issues. Preparation for Microsoft certification examination.	Prerequisites: None. (BPC110 or CIS105 and CIS121AB) suggested but not required.	L+L 3.0 4.0 4.0
MST141	Enterprise Desktop Support Technician	Troubleshooting and repairing problems with Microsoft Windows desktop operating systems. Basic knowledge of system architecture and security as needed to provide skills required to support users.	A grade of C or better required in all Prerequisites. Prerequisites: (CIS102 or any CIS102++ course) and CIS105 or permission of Instructor. Prerequisites or Corequisites: Any MST150++ course or permission of Instructor.	L+L 3.0 4.0 4.0

MST150EI	Configuring Windows 8	In-depth exploration of how to effectively install and configure Windows 8. Includes features of Windows 8, virtualization with Hyper-V, network connectivity, access to resources, monitor and maintain Windows clients and backup and recovery. Designed to prepare students for the Microsoft Windows 8 certification examination (70-687).	Prerequisites: None. MST140 or CNT140++ recommended.	L+L 3.0 4.0 4.0
MST150SV	Microsoft Windows 7 Configuration	Knowledge and skills necessary to perform installation and day-to-day administration and support of the Microsoft Windows 7 operating system. Preparation for the Microsoft certification examination.	Prerequisites: None. CIS190 or CNT140AA or MST140 suggested but not required.	L+L 3.0 4.0 4.0
MST150WT	Installing and Configuring Microsoft Windows 10	In-depth exploration of how to effectively install and configure Windows 10. Includes features of Windows 10, virtualization improvements, network connectivity, access to resources, monitor and maintain Windows clients and backup and recovery. Designed to prepare students for the Microsoft Windows 10 certification examination.	Prerequisites: None. CIS190 or CNT140AB suggested but not required.	L+L 3.0 4.0 4.0
MST152	Microsoft Windows Server	Knowledge and skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot Windows Server. Preparation for Microsoft certification examination.	Prerequisites: A grade of C or better in any MST150 course or Corequisites: any MST150 course or permission of Instructor.	L+L 4.0 5.0 5.0
MST155DA	Windows Server Network Infrastructure Configuration	Information and skills necessary to design a Microsoft Windows networking services infrastructure design. Includes network foundation design, Internet and private networks connectivity, in addition to functionality security and performance features of networking services.	Prerequisites: A grade of C or better in MST150, or any MST150++ course, or permission of Instructor.	L+L 4.0 5.0 5.0

MST155DB	Configuring Advanced Windows Server Services	In-depth exploration of how to effectively install and configure Windows Server. Designed to prepare students for the Microsoft Configuring Advanced Windows Server Services examination (70-412).	Prerequisites: A grade of C or better in MST158DA or MST158DB or permission of Instructor.	L+L 4.0 5.0 5.0
MST155DC	Installation, Storage, and Compute with Windows Server	This course focuses primarily on the installation, storage, and compute features and their functionality that is available within Windows Server. As Information Technology pushes towards more cloud based solutions and makes our classic approach obsolete, this course will help students prepare for a career within an Information Technology enterprise and help distinguish themselves in today's competitive job market. This course covers various topics like Windows Server installation, Hyper-V deployments and storage options in relation to this new cloud based reality.	Prerequisites: A grade of C or better in MST150++ or permission of Instructor.	L+L 4.0 5.0 5.0
MST157DA	Active Directory Windows Server Configuration	Information and skills necessary to install, configure and administer Active Directory service. Covers tasks required to create users and groups, and to implement Group Policies which provide centralized management of users and computers.	Prerequisites: Any MST course or permission of Instructor.	L+L 4.0 5.0 5.0
MST157DB	Administering Windows Server	In-depth exploration of how to effectively manage Windows Server. Designed to prepare students for the Administering Microsoft Windows Server examination (70-411).	Prerequisites: A grade of C or better in MST158DA or MST158DB or permission of Instructor.	L+L 4.0 5.0 5.0

MST157DC	Networking with Windows Server	This course focuses on the networking features and their functionality available within Windows Server. It builds upon the skills from the Installation, Storage, and Compute with Windows Server course (MST155DC) and will develop skills related to Software-Defined Networking (SDN) solutions within Hyper-V, remote connectivity with VPN and Direct Access, and providing Internet connectivity with Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), and Internet Protocol Address Management (IPAM). This course helps prepare for the 70-741 industry certification test.	Prerequisites: A grade of C or better in MST155DC or permission of Instructor.	L+L 4.0 5.0 5.0
MST158DA	Windows Server Administration	Knowledge and skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot Windows Server.	Prerequisites: A grade of C or better in (MST155 or any MST155++ course) and (MST157 or any MST157++ course), or permission of Instructor.	L+L 4.0 5.0 5.0
MST158DB	Installing and Configuring Windows Server	In-depth exploration of how to effectively install and configure Windows Server. Includes roles and features of Server, virtualization with Hyper-V, core network services, Active Directory, and Group Policy. Designed to prepare students for the corresponding Microsoft Windows Server Installation and Configuration examination (70-410).	Prerequisites: A grade of C or better in (MST140 or CNT140 or CNT140AA) and (MST150 or MST150SV or MST150VI or MST150XP) or permission of Instructor.	L+L 4.0 5.0 5.0
MST158DC	Identity Management with Windows Server 2016	Prepares students to manage Windows Server 2016 tasks. Configure and manage multiple services, such as Identity Management and Active Directory. Learn how to install and configure domain controllers and create and manage users, groups, and computers within Organizational Units. Prepares students for the Microsoft exam, Identity with Windows Server 2016-70-742.	Prerequisites: A grade of C or better in MST157DC.	L+L 4.0 5.0 5.0

MST280CA	Current Topics in Microsoft Computing	Critical inquiry of current topics in Microsoft Technology computing. Application of Microsoft Technology trends to solve problems and/or investigate issues.	Prerequisites: Permission of Instructor.	L+L 3.0 4.0 4.0
MTC098	Music Theory Boot Camp	Intensive review of music theory fundamentals to develop and/or refresh skills necessary for advanced study.	Prerequisites: None.	LEC 1.0 1.0 1.0
MTC100	Fundamentals of Music	Introduction to music notation and theory. Emphasis on fundamental concepts, including meter, rhythm, scales, keys, intervals and triads. Designed for the nonmusic major, but may be advised for music majors	Prerequisites: None.	L+L 2.0 3.0 3.0
MTC101	Introduction to Music Theory	Designed to develop written and aural skills necessary for advanced study of music theory and skills. Recommended for music majors	Prerequisites: None.	LEC 3.0 3.0 3.0
MTC103	Introduction to Aural Perception	An introduction to the aural skills necessary to hear relationships of intervals, rhythms, melody, and harmony in music.	Prerequisites: None.	L+L 1.0 2.0 2.0
MTC105	Music Theory I	The chronological study of music theory including: harmony, melody, texture, structure and timbre through analysis, original compositions and basic exercises to demonstrate musical concepts.	Prerequisites: A grade of C or better in MTC100 or MTC101 or permission of instructor. Corequisites: MTC106.	LEC 3.0 3.0 3.0
MTC106	Aural Perception I	The development of listening and performing skills through dictation, sight singing and keyboard harmony	Prerequisites: None. Corequisites: MTC105.	L+L 1.0 2.0 2.0
MTC110	Music Notation for Songwriting	Basic musical notational system with emphasis on note reading, staff placement, meter, rhythmic patterns, basic harmonic patterns, chords and chord symbols, lead sheet forms, scales and keys	Prerequisites: None.	LEC 2.0 2.0 2.0



MTC116	Music Software	Introduction to the basic computer skills needed to use music notation software. Emphasis on choosing the software; using mouse or keyboard input of music; choosing the format or template for the song; and using the tool palettes	Prerequisites: A grade of C or better in MTC110 or permission of Instructor.	LEC 1.0 1.0 1.0
MTC120	Introduction to Sound Design for Film and Video FMT 120	Basic principles of recording and mixing sound for film and video. Includes voice-over, automatic dialog replacement (ADR), foley, ambience, special effects and music. Emphasis on analog and digital recording techniques in the field as well as in a controlled environment.	Prerequisites: A grade of C or better in (FMT100 and FMT136) or permission of Instructor.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 1.0
MTC122	Fretboard Harmony	An in-depth study of functional and theoretical practice as applied to the fretboard of the guitar through understanding of chord symbols, intervals and rhythm	Prerequisites: A grade of C or better in MTC100 or MTC101.	LEC 3.0 3.0 3.0
MTC130	Jazz Theory	Develop written and aural theory skills necessary in the jazz idiom.	Prerequisites: A grade of C or better in (MTC101 and MTC103), or permission of Instructor.	LEC 2.0 2.0 2.0
MTC140	Songwriting	An introduction to the art and craft of songwriting through the study and analysis of diverse songwriters and musical styles, and creation of original songs.	Prerequisites: A grade of C or better in MTC101 or MTC105 or permission of Instructor.	LEC 3.0 3.0 3.0
MTC155	Music Theory II	A continuation of Music Theory I with emphasis on harmony and part-writing procedures	Prerequisites: A grade of C or better in MTC105. Corequisites: MTC156.	LEC 3.0 3.0 3.0
MTC156	Aural Perception II	A continuation of Aural Perception I, including harmonic practices	Prerequisites: None. Corequisites: MTC155.	L+L 1.0 2.0 2.0
MTC180	Computer Literacy for Musicians	Instruction in basic computer literacy, including generic applications and music-specific programs with hands-on experience. Ability to read music notation required.	Prerequisites: A grade of C or better in MTC101, or MTC105, or Corequisites: MTC105, or permission of Instructor.	L+L 3.0 4.0 4.0

MTC181	Popular Music Orchestration and Arranging	Basic orchestration and arranging techniques as used in popular music genres including jazz, pop, and rock music for vocal and instrumental music performance ensembles. Idiomatic uses of harmony, melodic rhythm, voicing, tonal color and notation.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: (MTC155 or higher level of MTC music theory course) and MTC180. Higher Level Theory Courses: MTC156 or MTC205 or MTC206 or MTC255 or MTC256.	LEC 3.0 3.0 3.0
MTC189	Introduction to the Electronic Music Lab	Designed for the student with little or no experience in electronic music. Includes the various components of the electronic music lab, including synthesizers, MIDI (Musical Instrument Digital Interface), computers, and audio systems	Prerequisites: None.	L+L 1.0 2.0 2.0
MTC190	Computer-Aided Music Notation	Introduction to computer-aided music notation, culminating in editing and producing publication-quality music scores. Ability to read music notation required	Prerequisites: Permission of Instructor.	L+L 3.0 4.0 4.0
MTC191	Electronic Music I	An introduction to creating music with computers, utilizing the Musical Instrument Digital Interface (MIDI) protocol, synthesizers, digital audio software/hardware, and MIDI controllers.	Prerequisites: None.	L+L 3.0 4.0 4.0
MTC192	Electronic Music II	Continued study of creating music with computers, utilizing the Musical Instrument Digital Interface (MIDI) configurations, audio editing, and music software/hardware at the intermediate level. Emphasis on more complex configurations and their applications in compositions.	Prerequisites: A grade of C or better in MTC191.	L+L 3.0 4.0 4.0
MTC193	Computer-Based Sound Synthesis	Principles of sound synthesis using computer-based methods. Synthesis methods include subtractive, additive, frequency modulation, sample and synthesis, and hybrid. Emphasis on synthesis techniques for use in electronic music	Prerequisites: A grade of C or better in MTC191 or permission of Instructor.	L+L 3.0 4.0 4.0

MTC203	Jazz Composition	Composition and analysis of standard song forms as well as other standard compositional practices and forms idiomatic to jazz	Prerequisites: A grade of C or better in MTC155 or MUP165 or permission of Instructor.	L+L 3.0 3.0 0.0
MTC205	Music Theory III	The study of chromatic harmony and melody, modulation techniques and expanded chords. The analysis of formal structure	Prerequisites: A grade of C or better in MTC155. Corequisites: MTC206.	LEC 3.0 3.0 3.0
MTC206	Aural Perception III	A development of listening and performing skills, including an introduction of chromatic harmonic techniques and concepts of style.	Prerequisites: None. Corequisites: MTC205.	L+L 1.0 2.0 2.0
MTC220	Advanced Sound Design for Film and Video	Explores techniques and advanced applications used in designing sound using original student footage on a non-linear editing system.	Prerequisites: A grade of C or better in FMT/MTC120 or permission of Instructor.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 2.0
MTC240	Composition	Introduction to the basics of music composition, stressing techniques and procedures for developing original ideas.	Prerequisites: A grade of C or better in (MTC105 and MTC106 or equivalent) and permission of Instructor.	L+L 3.0 0.6 0.0
MTC255	Music Theory IV	A continuation of Music Theory III, including 20th century theories and techniques	Prerequisites: A grade of C or better in MTC205. Corequisites: MTC256.	LEC 3.0 3.0 3.0
MTC256	Aural Perception IV	A continuation of Aural Perception III, including extended chords	Prerequisites: None. Corequisites: MTC255.	L+L 1.0 2.0 2.0
MTC261	Modern Arranging I	Basic arranging techniques as used in jazz and rock idioms for combo and special ensembles. Idiomatic uses of harmony, melodic rhythm, voicing, tonal color and notation.	Prerequisites: A grade of C or better in MUP164 and MUP165 or permission of Instructor.	LEC 3.0 3.0 3.0
MTC262	Modern Arranging II	Arranging for larger ensembles, including strings, jazz ensemble, woodwinds and synthesizers. Detailed study of harmony, form and orchestration.	Prerequisites: A grade of C or better in MTC261 or permission of Instructor.	LEC 3.0 3.0 3.0

MTC291	Electronic Music III	Continued study of the production of music using electronic processes. Emphasis on more complex configurations and their applications in live performance or studio use.	Prerequisites: A grade of C or better in MTC192.	L+L 3.0 4.0 4.0
MTC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
MTC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

MTC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MTC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
MTC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

MTC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MTC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MTO106	Machining Fundamentals and Geometric Dimensioning & Tolerancing	Introduction to machining, industrial safety, basic print reading and interpretation, applications and use of measuring equipment, inspection techniques, introduction to geometric dimensioning and tolerancing (GD&T), shop applied mathematics, machine and cutting tool selections and applications, material identification and handling, machine maintenance fundamentals.	Prerequisites: None.	144

MTO107	Bench Work, Layout and Drill Press Operations	Learn about common bench work and layout techniques related to pre and post setup and machining operations, basics of job planning, machine safety protocols, tool selection, hole-making operations, hand and machine tool operations, speeds/feeds theory and inspection techniques for holes and threads. Learn basic drilling operations and related hole-making techniques.	Prerequisites: None.	102
MTO119	Manual Mill Operations	Learn the basic components and operations of a vertical manual milling machine. Learn cutting tool selection and applications for milling. Gain knowledge in basic surface grinding operations.	Prerequisites: None.	108
MTO121	Manual Lathe Operations	Learn the basic components and operations of a manual turning machine. Learn cutting tool selection and applications for basic turning operations. Gain knowledge in basic surface grinding operations.	Prerequisites: None.	150
MTO132	CNC Mill Programming and Operations	Learn basic computer numerical control (CNC) milling machines concepts, programming, and operations.	Prerequisites: None.	150
MTO140	CNC Lathe Programming and Operations	Learn basic computer numerical control (CNC) lathe machining concepts, programming, and operations. Learn basic concepts of computer-aided design and computer-aided manufacturing (CAD/CAM).	Prerequisites: None.	150
MUC109	Music Business: Content Creation and Copyright	Designed to provide an overview of content creation and copyright considerations within the Music Industry. Topics include songwriting and music creation, copyright, publishing and licensing, studio production, media applications of music, business ownership and operations, and emerging technologies.	Prerequisites: None.	LEC 3.0 3.0 3.0

MUC110	Music Business: Marketing and Monetization	Designed to provide an overview of the marketing and monetization of music. Topics include music label operations; contracts; marketing, promotion, and merchandising; agents, managers, and attorneys; concert promotion and touring; and unions and guilds.	Prerequisites: None.	LEC 3.0 3.0 3.0
MUC111	Digital Audio Workstation I (DAW I)	Use of digital mixing and automation software in conjunction with editing and recording. Includes computer operation, troubleshooting, and file management.	Prerequisites: A grade of C or better in MUC195 or MUC195AA or FMP105 or permission of Instructor.	L+L 3.0 5.0 5.0
MUC112	Digital Audio Workstation II (DAW II)	Use of digital mixing and automation software in conjunction with editing and recording. Includes computer operation, troubleshooting, and file management.	Prerequisites: A grade of C or better in MUC111, and (MUC195 or MUC195AA).	L+L 3.0 5.0 5.0
MUC114	Song Publishing and Marketing	Publishing and marketing of songs including services that publishers provide and what to consider when choosing one, a summary of various aspects and types of contracts, working as a staff writer, publisher marketing, self marketing, and additional markets.	Prerequisites: None.	LEC 1.0 1.0 0.0
MUC115	Song Copyrighting and Demos	Terms involved with copyright laws. Clarification of when copyright begins, ownership of copyright and registration, limitations of copyright, and when works become public domain. Phases of making a demonstration tape or CD. Promotion and presentation of a demo.	Prerequisites: None.	LEC 1.0 1.0 0.0
MUC120	Piano Tuning and Repair I	Introduction to piano tuning and repair; basic care and maintenance of the instrument; hands-on experience	Prerequisites: None.	L+L 3.0 4.0 4.0
MUC121	Piano Tuning and Repair II	Advanced tuning techniques and basic refinishing	Prerequisites: A grade of C or better in MUC120.	L+L 3.0 4.0 4.0



MUC122	Sound Design I	Introduction to Sound Design and Audio Post-Production for Multimedia. Includes creating and editing Sound Effects, ADR, Foley, Music, and Ambience, such as Film, TV, Video Gaming, Theatre, and Dance. Emphasis on computer assisted production using Digital Audio Workstations and sound design techniques using industry-standard equipment.	Prerequisites: None.	L+L 3.0 5.0 5.0
MUC130	Music Electronic Components	Survey of electronics used in the music industry with emphasis on troubleshooting and minor repair of musical electronic equipment.	Prerequisites: None.	L+L 3.0 6.0 6.0
MUC135	Introduction to Disc Jockey Techniques	Development of beginning level live-performance disc jockey techniques. Emphasis on understanding the construction of industry-formatted dance songs, cueing, segueing/mixing methods, the relationship of beats per minute to segueing, and programming songs to entertain a live audience. Covers the history of the live performance DJ and strategies for soliciting employment in the field.	Prerequisites: None.	L+L 3.0 3.0 3.0
MUC136	Turntablism: The Art of the Scratch DJ	Covers the skills required in vinyl manipulation; examines the development of turntable techniques and the contributions made by individual turntable artists.	Prerequisites: None.	L+L 3.0 4.0 4.0
MUC137	Digital DJ Performance Techniques	Covers the skills required for live performance employing digital media with an emphasis on programs such as Serato Scratch Live and Ableton Live.	Prerequisites: None.	L+L 3.0 4.0 4.0
MUC138	Disc Jockey Laboratory	Operation, scope, roles and responsibilities in the commercial music production process.	Prerequisites: None.	LAB 1.0 1.0 0.0

MUC139	Introduction to Emcee-Rapping Techniques	Development of beginning level live-performance and recording emcee-rap techniques. Emphasis on understanding rhyme, structure, breath control, stage presence, and performance. Covers the history of the DJ/emcee and origins of the rapper, song structure, enunciation, vocal delivery, breath control, melody, and pacing while staying on beat.	Prerequisites: None.	L+L 3.0 4.0 4.0
MUC145	Recording Studio Business Operations	Operation, scope, roles and responsibilities in the commercial music production process. Focuses on the business aspects and daily management of the professional recording studio. Includes strategies for project management, client service, marketing, equipment acquisition, staffing and employment.	Prerequisites: None.	LEC 2.0 2.0 2.0
MUC180	Computer Literacy for the Music Business	Basic computer literacy, including business applications used in the Music Industry, with hands-on experience.	Prerequisites: A grade of C or better in MUC109 or permission of Instructor or Department or Division Chair.	L+L 1.0 3.0 0.0
MUC194	Introduction to Audio Mixing Techniques	Approaches in final mixing for different musical genres. Develop critical listening skills, and applying these techniques to students' projects. Professional-type facilities and equipment available for student use.	Prerequisites: A grade of C or better in MUC111 and MUC196, or permission of Instructor.	L+L 3.0 4.0 4.0
MUC195	Studio Music Recording I	Basic principles of studio sound recording. Emphasis on musical acoustics, operation of recording equipment, studio setups, and multitrack recording. Includes studio session process and musical production decisions.	Prerequisites: None.	L+L 3.0 5.0 5.0

MUC195AA	Studio Music Recording I	Basic principles of studio sound recording. Emphasis on musical acoustics, operation of recording equipment, studio setups, and multitrack recording. Includes studio session process and musical production decisions.	Prerequisites: None.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 2.0
MUC196	Studio Music Recording II	Emphasis on signal-processing equipment, mixing consoles, and advanced musical recording session procedures, production, and engineering. Includes mix-down and resultant master tape of a musical recording session.	Prerequisites: A grade of C or better in MUC195 or MUC195AA.	L+L 3.0 5.0 5.0
MUC196AA	Studio Music Recording II	Emphasis on signal-processing equipment, mixing consoles, and advanced musical recording session procedures, production, and engineering. Includes mix-down and resultant master tape of a musical recording session.	Prerequisites: A grade of C or better in MUC195 or MUC195AA.	LEC 3.0 3.0 3.0 LAB 0.0 2.0 2.0
MUC197	Live Sound Reinforcement I	Basic principles of live sound engineering. Emphasis on signal flow, acoustic, sound reinforcement set-ups and installation, signal processing, microphone selections and placement. Includes setting up sound systems and mixing live music.	Prerequisites: None.	L+L 3.0 4.0 4.0
MUC198	Live Sound Reinforcement II	Emphasis on musical production decisions. Front-of-house and monitor console placement, loudspeaker arrangements, power considerations, program material and sound pressure levels. Includes setting up of sound system and mixing live performances with various styles of music. In addition to mixing at alternate locations.	Prerequisites: A grade of C or better in MUC197.	L+L 3.0 4.0 4.0
MUC209	Music Industry Entrepreneurship	Operation, scope, and career opportunities in the music business. Focuses on music in the areas of entrepreneurship, visionary development and the collaboration process.	Prerequisites: A grade of C or better in MUC109 and MUC110 or permission of Instructor.	LEC 3.0 3.0 0.0

MUC210	Advanced Industry Topics: Concert Promotion and Touring	Operation, scope, and career opportunities in the music business. Focuses on advanced aspects of concert promotion, touring and festival production. Areas of focus include marketing, planning, operations, talent buying, and budgeting for profitable and successful music-performance stage shows.	Prerequisites: A grade of C or better in MUC109 or permission of Instructor or Department or Division Chair.	LEC 3.0 3.0 0.0
MUC211	Advanced Industry Topics: Artist Management and Development	Operation, scope, and career opportunities in the music business. Focus on advanced aspects of artist management and development. Include roles and responsibilities of an Artist Manager, the nature and structure of the relationship between an Artist and Artist Manager, and the development of business, and career management techniques for Artist Managers.	Prerequisites: A grade of C or better in MUC109 or permission of Instructor or Department or Division Chair.	LEC 3.0 3.0 0.0
MUC215	Music Industry Seminar: Innovation in Music Technology	Seminar in Music Industry technology with an emphasis on current product and service innovations. Emphasis on marketing and promotional uses of new technology.	Prerequisites: None.	LEC 1.0 1.0 0.0
MUC216	Music Workshop/Seminar	Workshop seminar in commercial music disciplines.	Prerequisites: None.	LEC 1.0 1.0 0.0
MUC222	Sound Design II	Intermediate level Sound Design and Audio Post-Production for Multimedia.	A grade of C or better required in all Prerequisites. Prerequisites: MUC122. Prerequisites or Corequisites: MTC191, or MUC111, or permission of Instructor.	L+L 3.0 5.0 5.0
MUC237	Electronic Dance Music Production	Process and skills required for music production employing digital media, with an emphasis on producing music on digital audio workstations.	Prerequisites: A grade of C or better in MTC191 or permission of Instructor.	L+L 3.0 4.0 4.0

MUC240	Creative Music Production	Operation, scope, roles and responsibilities in the commercial music production process. Focuses on creative aspects of commercial music production, including song selection, realization of artistic vision, studio selection, musician and vocal staff selection, coaching for optimal performance, analyzing song structure and sound quality and trouble-shooting problems in the overall artistic impression of the finished music product. Lab work includes creation and execution of a finished professional-quality music production.	Prerequisites: A grade of C or better in [(MTC101 and MTC103) or (MTC105 and MTC106)] and (MTC192, MUC112 and MUC295) or permission of Instructor.	L+L 4.0 5.0 0.0
MUC241	Business Principles of Music Production	Operation, scope, roles and responsibilities in the commercial music production process. Focuses on business aspects of commercial music production, including project management, budgeting, production personnel, deal structures, revenue sources, copyright, publishing percentages and career strategies.	Prerequisites: A grade of C or better in (MUC109 and MUC110) or permission of Instructor.	LEC 3.0 3.0 0.0
MUC242	Music Genres and Styles	Operation and development of creative skills in the commercial music production process. Geared towards music producers and emphasizing analysis and comprehension of commercial music styles and genres, including: pop, country, rock, soul, rhythm and blues, funk, and hip-hop. Study of the thematic organization of popular musical styles.	Prerequisites: None.	LEC 2.0 2.0 0.0
MUC274	Music Industry Study Tour	A tour of the music industry outside the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance awareness of professional opportunities and careers.	Prerequisites: None.	LAB 2.0 2.0 0.0

MUC280	Recording Studio Maintenance	Introduction to the techniques, electronics, and tools used to perform basic recording studio, live sound, and electronic musical instrument equipment maintenance	Prerequisites: A grade of C or better in MUC195AA or MUC111 or permission of instructor.	L+L 3.0 3.0 3.0
MUC289	Live Sound Reinforcement III	Focus on audio engineering and media production for performances and events. The course will cover advanced audio concepts and techniques, basic lighting, rigging, and media. Students will apply their knowledge assisting as part of productions, events, advanced projects or other activities related to the course material.	Prerequisites: A grade of C or better in MUC198.	L+L 3.0 6.0 6.0
MUC290AA	Music Business Internship	Music Business Internship work experience. Perform a variety of activities, to fulfill the routines and responsibilities of the department or business where the internship is served. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 0.0
MUC291AA	Disc Jockey Internship	Disc Jockey (DJ) internship work experience, which may include emceeing and/or electronic dance music production, under the supervision of an experienced industry professional. Perform a variety of activities to fulfill the routines and responsibilities of the department or business where the internship is served.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 0.0
MUC292	Sound Design III	Advanced Sound Design Production for Multimedia: Designed to provide an atmosphere of team research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use.	Prerequisites: A grade of C or better in MUC222, or permission of Instructor.	L+L 3.0 6.0 6.0

MUC293	Self Promotion for Music	Designed to provide the skills and knowledge required for effective self-promotion. Focus on career goal development, market analysis, communication and networking skills, and the development of a self-promotional campaign.	Prerequisites: None.	LEC 1.0 1.0 1.0
MUC294	Portfolio for Music	Includes developing a portfolio that demonstrates music related skills and marketing of songs, recordings, and musical performances.	Prerequisites: A grade of C or better in MUC293.	LEC 1.0 1.0 0.0
MUC295	Studio Music Recording III	Producing and engineering a recording project. Covers how recording studios work and how recording projects are organized from pre-production through delivery of the final mix.	Prerequisites: A grade of C or better in MUC196 and (MUC111 or permission of Instructor).	L+L 3.0 6.0 6.0
MUC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

MUC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
MUC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MUC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
MUC297AA	Audio Production Internship	Music Internship work experience in a business or industry. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 0.0



MUC297AB	Audio Production Internship	Music Internship work experience in a business or industry eighty (80) hours of designated work per credit.	Prerequisites: A grade of C or better in MUC110.	L+L 2.0 2.0 0.0
MUC297AC	Audio Production Internship	Music Internship work experience in a business or industry eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	L+L 3.0 3.0 0.0
MUC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MUC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MUC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

MUE107	Woodwinds Methods I	Practical class with emphasis on techniques of playing and teaching woodwind instruments including embouchure, breath control, tone, mouthpiece selection, and literature.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUE108	Percussion Methods I	Practical class with emphasis on techniques of playing and teaching percussion instruments including hand position, rudiments, stick control, and elements of reading rhythms.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUE109	Brass Methods I	Practical class with emphasis on techniques of playing and teaching brass instruments including embouchure, breath control, tone, and literature.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUE110	Strings Methods I	Practical class with emphasis on techniques of playing and teaching string instruments including tone control and literature.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUE111	Guitar Methods	Practical class with emphasis on both classical and popular techniques, methods, materials, solo/ensemble literature and repertoire used in all levels of guitar. Instructional approaches to the guitar as both a harmonizing instrument and in an ensemble setting.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUE207	Woodwinds Methods II	Continuation of Woodwinds Methods I with additional emphasis on skills including ensemble performance, transposition, increasing range and literature.	Prerequisites: A grade of C or better in MUE107 or permission of Instructor.	L+L 1.0 3.0 3.0
MUE208	Percussion Methods II	Continuation of Percussion Methods I with additional emphasis on ensemble techniques and representative literature.	Prerequisites: A grade of C or better in MUE108 or permission of Instructor.	L+L 1.0 3.0 3.0
MUE209	Brass Methods II	Continuation of Brass Methods I with additional focus on skills including ensemble performance, transposition, increasing range and solo literature.	Prerequisites: A grade of C or better in MUE109 or permission of Instructor.	L+L 1.0 3.0 3.0

MUE210	Strings Methods II	Continuation of String Methods I with additional focus on skills including fingering and bowing techniques, and solo/ensemble literature.	Prerequisites: A grade of C or better in MUE110 or permission of Instructor.	L+L 1.0 3.0 3.0
MUE240	Introduction to Choral Methods	Overview of techniques, methods, materials, style characteristics, and repertoire used in directing choral music at the secondary level including simulated teaching, conducting, and the demonstration of vocal and choral performance practices.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUE250	Vocal Pedagogy/Voice Methods	Study of the anatomy, physiology, and acoustics of singing as applied to healthy vocal function and the teaching of singing. Topics include: overview of techniques, materials, and literature used in teaching singing.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUE296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

MUE296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
MUE296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MUE296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

MUE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MUE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MUE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

MUP101AA	Private Instruction: Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101AD	Private Instruction: Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101AG	Private Instruction: Harpsichord	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101AJ	Private Instruction: Organ	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101AM	Private Instruction: Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101AP	Private Instruction: Trumpet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101AS	Private Instruction: French Horn	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101AV	Private Instruction: Trombone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101AY	Private Instruction: Euphonium	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0



MUP101BB	Private Instruction: Tuba	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101BE	Private Instruction: Flute	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101BH	Private Instruction: Oboe	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101BK	Private Instruction: Clarinet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101BN	Private Instruction: Bassoon	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101BQ	Private Instruction: Saxophone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101BT	Private Instruction: Violin	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101BW	Private Instruction: Viola	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101BZ	Private Instruction: Violoncello	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101CC	Private Instruction: Contrabass	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101CI	Private Instruction: Percussion	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101CJ	Private Instruction: Harp	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0

MUP101CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP101CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 1.0 0.6 0.0
MUP102AA	Private Instruction: Voice	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102AD	Private Instruction: Piano	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102AG	Private Instruction: Harpsichord	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102AJ	Private Instruction: Organ	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0



MUP102AM	Private Instruction: Guitar	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102AP	Private Instruction: Trumpet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102AS	Private Instruction: French Horn	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102AV	Private Instruction: Trombone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102AY	Private Instruction: Euphonium	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102BB	Private Instruction: Tuba	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102BE	Private Instruction: Flute	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102BH	Private Instruction: Oboe	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102BK	Private Instruction: Clarinet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102BN	Private Instruction: Bassoon	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102BQ	Private Instruction: Saxophone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102BT	Private Instruction: Violin	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102BW	Private Instruction: Viola	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102BZ	Private Instruction: Violoncello	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102CC	Private Instruction: Contrabass	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102CI	Private Instruction: Percussion	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102CJ	Private Instruction: Harp	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0

MUP102CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP102CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0



MUP102CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: None.	L+L 2.0 1.2 0.0
MUP110	Concert Music	Attendance at concerts, recitals and music lectures on and off campus. Required each semester for all music majors	Prerequisites: None.	LEC 0.5 0.5 0.5
MUP123AA	Studio Class/Piano	Performance and laboratory class for students enrolled in private piano instruction. Emphasis on demonstration and discussion of specific piano problems.	None Corequisites: Private Piano Instruction.	L+L 0.5 0.5 0.5
MUP123AB	Studio Class/Voice	Performance and laboratory class for students enrolled in private voice instruction. Emphasis on demonstration and discussion of specific vocal problems.	None Corequisites: Private Voice Instruction.	L+L 0.5 0.5 0.5
MUP123AC	Studio Class/Guitar	Performance and laboratory class for students enrolled in private guitar instruction. Emphasis on demonstration and discussion of specific guitar problems	None Corequisites: Private Guitar Instruction.	L+L 0.5 0.5 0.5
MUP123AD	Studio Class: Instrumental	Performance and laboratory class for students enrolled in private instrumental instruction. Emphasis on demonstration and discussion of specific instrumental problems	None Corequisites: Private Instrumental Instruction.	L+L 0.5 0.5 0.5
MUP123AE	Studio Class: Jazz Styles	Performance and laboratory class for students enrolled in private jazz styles instruction. Emphasis on demonstration and discussion of specific jazz styles problems	None Corequisites: Private Jazz Styles Instruction.	L+L 0.5 0.5 0.5

MUP127	Class Guitar I	Emphasis on note-reading and folk-style harmonic accompaniment. Includes finger-style playing. Stresses development of efficient practice techniques and proper sitting and hand positions.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP128	Class Guitar II	Note-reading range including second position and parts of higher positions. Classical, popular, Latin, and other styles of music. Theory including scales, keys, and chord construction. Technical exercises of both hands.	Prerequisites: A grade of C or better in MUP127 or permission of Instructor.	L+L 1.0 3.0 3.0
MUP130	Beginning Group Piano	Basic introduction to playing piano through music reading, chords, rhythmic, and written activities. Designed for those with little or no piano experience.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP131	Class Piano I	Development of beginning piano techniques and the fundamentals of music including basic hand position, music-reading skills of melodic and harmonic material, major scales, transposition, and harmonizations including the I, IV, V7 chords.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP132	Class Piano II	Continuation of Piano I with emphasis on elementary piano techniques including major and minor scales, transposition, improvisation, and sight reading	Prerequisites: A grade of C or better in MUP131 or permission of Instructor.	L+L 1.0 3.0 3.0
MUP133	Class Voice I	Introduction to the fundamentals of vocal production. Emphasis on breathing techniques, tone production and performances in class of solo vocal literature.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP134	Class Voice II	Continuation of Class Voice I including the elements of stage presence and diction.	Prerequisites: A grade of C or better in MUP133 or permission of Instructor.	L+L 1.0 3.0 3.0
MUP135	Class Native American Flute I	Practical class with emphasis on playing, including embouchure, breath control, finger control, reading from printed score and improvising songs.	Prerequisites: None.	L+L 2.0 3.0 3.0

MUP140	Elementary Piano Pedagogy	An overview of techniques, methods, materials, stylistic characteristics, and repertoire used in teaching piano to students at the early and late elementary levels including creating a studio policy, simulated teaching, and observing private instruction and group piano classes	Permission of Instructor or department or division.	LEC 2.0 2.0 2.0
MUP141	Intermediate Piano Pedagogy	Overview of techniques, methods, materials, stylistic characteristics, and repertoire used in teaching piano students at the intermediate and early advanced levels including simulated teaching, performance and competition preparation, and observing private instruction and group piano classes	Permission of Instructor or department or division.	LEC 2.0 2.0 2.0
MUP149	Gospel Chorus	A mixed chorus with emphasis on college/community participation and preparation of a variety of Gospel Music for public performance. Auditions may be required.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP150	Community Chorus	A mixed chorus with emphasis on college/community participation and preparation of a variety of choral literature for public performance. Auditions may be required.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP151AA	Private Instruction: Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AA.	L+L 1.0 0.6 0.0

MUP151AD	Private Instruction: Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AD.	L+L 1.0 0.6 0.0
MUP151AG	Private Instruction: Harpsichord	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AG.	L+L 1.0 0.6 0.0
MUP151AJ	Private Instruction: Organ	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AJ.	L+L 1.0 0.6 0.0

MUP151AM	Private Instruction: Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AM.	L+L 1.0 0.6 0.0
MUP151AP	Private Instruction: Trumpet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AP.	L+L 1.0 0.6 0.0
MUP151AS	Private Instruction: French Horn	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AS.	L+L 1.0 0.6 0.0

MUP151AV	Private Instruction: Trombone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101AV.	L+L 1.0 0.6 0.0
MUP151AY	Private Instruction: Euphonium	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, and percussion.	Prerequisites: A grade of C or better in MUP101AY.	L+L 1.0 0.6 0.0
MUP151BB	Private Instruction: Tuba	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BB.	L+L 1.0 0.6 0.0

MUP151BE	Private Instruction: Flute	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BE.	L+L 1.0 0.6 0.0
MUP151BH	Private Instruction: Oboe	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BH.	L+L 1.0 0.6 0.0
MUP151BK	Private Instruction: Clarinet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BK.	L+L 1.0 0.6 0.0

MUP151BN	Private Instruction: Bassoon	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BN.	L+L 1.0 0.6 0.0
MUP151BQ	Private Instruction: Saxophone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BQ.	L+L 1.0 0.6 0.0
MUP151BT	Private Instruction: Violin	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BT.	L+L 1.0 0.6 0.0



MUP151BW	Private Instruction: Viola	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BW.	L+L 1.0 0.6 0.0
MUP151BZ	Private Instruction: Violoncello	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101BZ.	L+L 1.0 0.6 0.0
MUP151CC	Private Instruction: Contrabass	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101CC.	L+L 1.0 0.6 0.0

MUP151CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CF.	L+L 1.0 0.6 0.0
MUP151CI	Private Instruction: Percussion	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101CI.	L+L 1.0 0.6 0.0
MUP151CJ	Private Instruction: Harp	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP101CJ.	L+L 1.0 0.6 0.0

MUP151CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CK.	L+L 1.0 0.6 0.0
MUP151CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CL.	L+L 1.0 0.6 0.0
MUP151CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CM.	L+L 1.0 0.6 0.0

MUP151CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CN.	L+L 1.0 0.6 0.0
MUP151CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CO.	L+L 1.0 0.6 0.0
MUP151CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CP.	L+L 1.0 0.6 0.0

MUP151CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP101CQ.	L+L 1.0 0.6 0.0
MUP152AA	Private Instruction: Voice	Private Instruction emphasizing musicianship, literature, technique and performance. Four-course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AA.	L+L 2.0 1.2 0.0
MUP152AD	Private Instruction: Piano	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AD.	L+L 2.0 1.2 0.0

MUP152AG	Private Instruction: Harpsichord	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AG.	L+L 2.0 1.2 0.0
MUP152AJ	Private Instruction: Organ	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AJ.	L+L 2.0 1.2 0.0
MUP152AM	Private Instruction: Guitar	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AM.	L+L 2.0 1.2 0.0

MUP152AP	Private Instruction: Trumpet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AP.	L+L 2.0 1.2 0.0
MUP152AS	Private Instruction: French Horn	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AS.	L+L 2.0 1.2 0.0
MUP152AV	Private Instruction: Trombone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AV.	L+L 2.0 1.2 0.0

MUP152AY	Private Instruction: Euphonium	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102AY.	L+L 2.0 1.2 0.0
MUP152BB	Private Instruction: Tuba	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BB.	L+L 2.0 1.2 0.0
MUP152BE	Private Instruction: Flute	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BE.	L+L 2.0 1.2 0.0



MUP152BH	Private Instruction: Oboe	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BH.	L+L 2.0 1.2 0.0
MUP152BK	Private Instruction: Clarinet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BK.	L+L 2.0 1.2 0.0
MUP152BN	Private Instruction: Bassoon	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BN.	L+L 2.0 1.2 0.0

MUP152BQ	Private Instruction: Saxophone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BQ.	L+L 2.0 1.2 0.0
MUP152BT	Private Instruction: Violin	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BT.	L+L 2.0 1.2 0.0
MUP152BW	Private Instruction: Viola	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BW.	L+L 2.0 1.2 0.0

MUP152BZ	Private Instruction: Violoncello	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102BZ.	L+L 2.0 1.2 0.0
MUP152CC	Private Instruction: Contrabass	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102CC.	L+L 2.0 1.2 0.0
MUP152CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CF.	L+L 2.0 1.2 0.0

MUP152CI	Private Instruction: Percussion	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102CI.	L+L 2.0 1.2 0.0
MUP152CJ	Private Instruction: Harp	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP102CJ.	L+L 2.0 1.2 0.0
MUP152CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CK.	L+L 2.0 1.2 0.0

MUP152CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CL.	L+L 2.0 1.2 0.0
MUP152CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CM.	L+L 2.0 1.2 0.0
MUP152CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CN.	L+L 2.0 1.2 0.0

MUP152CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CO.	L+L 2.0 1.2 0.0
MUP152CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CP.	L+L 2.0 1.2 0.0
MUP152CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP102CQ.	L+L 2.0 1.2 0.0

MUP153	Concert Choir	A mixed choir designed to emphasize choral techniques and performance of all styles of choral literature. Public performances are scheduled each semester.	Prerequisites: None.	L+L 1.0 5.0 5.0
MUP154AA	Jazz Vocal Ensemble	Practical and performing experience in vocal jazz. Includes music from the 1920's through the present.	Prerequisites: Auditions required or permission of Instructor.	L+L 1.0 3.0 3.0
MUP154AB	Jazz Vocal Ensemble	Practical and performing experience in vocal jazz. Includes music from the 1920's through the present. Requires participation in various public performances on campus and in the community throughout the semester.	Prerequisites: Auditions required and two semesters in A Cappella Choir or permission of Instructor.	L+L 2.0 5.0 5.0
MUP155	Handbell Choir (Bell Canto)	Emphasis on practical and performing skills in bell ringing. Preparation of all styles of bell literature. Scheduled public performances during the year.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP157	Women's Chorus	A women's chorus designed to emphasize choral technique and performance of all styles of appropriate choral literature. Public performances are scheduled during the year. Auditions may be required.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP158	Rock Band	Emphasizes instrumental and vocal techniques and the preparation of all styles of rock band literature. Introduces music business. Requires participation in public and private performances throughout the semester.	Prerequisites: Auditions are required.	L+L 1.0 3.0 3.0
MUP159	Community Orchestra	Emphasis on college/community participation and the preparation of orchestral literature for public performance. Auditions may be required.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP160	Orchestra	A class designed to emphasize orchestral ensemble techniques and the preparation of all styles of orchestral literature. Public performances are scheduled during the year. Auditions may be required.	Prerequisites: None.	L+L 1.0 5.0 5.0

MUP161	Community Band	Emphasis on college/community participation and the preparation of band literature for public performance. Auditions may be required.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP162	Band	Designed to emphasize instrumental techniques and the preparation of all styles of band literature for ensemble performance. Includes public performances.	Prerequisites: None.	L+L 1.0 5.0 5.0
MUP163	Jazz Ensemble	Practical and performance experience in various jazz styles. Open to all students on the basis of auditions.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP164	Jazz Improvisation I	Theoretical and performance skills in many styles of jazz improvisation.	Prerequisites: None.	L+L 2.0 3.0 3.0
MUP165	Jazz Improvisation II	Intermediate theoretical and performance skills in many styles of jazz improvisation.	Prerequisites: A grade of C or better in MUP164 or permission of Instructor.	L+L 2.0 3.0 3.0
MUP166	Jazz Piano I	Introduction to basic jazz piano skills, including chord construction, chord voicings, accompanying and solo piano arrangements.	Prerequisites: A grade of C or better in MUP131 or permission of Instructor.	L+L 1.0 2.0 2.0
MUP167	Jazz Piano II	Continued development of jazz piano techniques with emphasis on voicing formulas for ninth, eleventh, thirteenth, and altered dominant chords	Prerequisites: A grade of C or better in MUP166 or permission of Instructor.	L+L 1.0 2.0 2.0
MUP168	Mariachi Band	Emphasis on college and community participation and the preparation of mariachi band literature for public performance. Auditions may be required.	Prerequisites: None.	L+L 1.0 3.0 3.0



MUP169	Guitar Ensemble	Ensemble of the entire guitar family that may include standard, requinto, alto, bass, and contrabass guitars that emphasizes guitar techniques and the preparation of all styles of guitar ensemble literature. Literature will include modern and historical guitar ensemble repertoire, new works, arrangements, and transcriptions from various musical periods and traditions as well as guitar literature from a diverse number of world musical traditions. Guitar techniques are studied and refined as they relate to the literature performed. Emphasis placed on reading and listening skills, rehearsal and preparation, conducting and performance cues, and performance experience in various guitar styles. Concerts presented throughout the semester.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP171	Opera Workshop	A workshop in the study and performance of operatic literature.	Prerequisites: None.	L+L 2.0 5.0 5.0
MUP181	Chamber Music Ensembles	Practical and performance experience in instrumental, vocal, and mixed ensembles.	Prerequisites: None.	L+L 1.0 2.0 2.0
MUP182	Chamber Singers	Practical and performance experience in various styles of vocal music.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP185	Flute Choir	Ensemble of the entire flute family that may include piccolo, E flat flute, C flutes, alto flutes, and bass flute. Literature will include commissioned works, original works for standard flute choir, and transcriptions from various musical periods	Prerequisites: Audition and Permission of Instructor.	L+L 1.0 3.0 3.0

MUP190	Percussion Ensemble	<p>Practical and performance experience in various percussion styles. Percussion literature from a diverse number of world musical traditions. Western European art music, various African traditions, Indian music, Japanese music, Indonesian music, Mexican, Central, and South American music, and percussion compositions from the American Experimental Tradition rehearsed and performed. Concerts presented throughout the semester. Percussion techniques are studied and refined as they relate to the literature performed. Emphasis placed on reading and listening skills, increased aesthetic discrimination. Informed performance practice and skills on all percussion instruments and traditions.</p>	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP201AA	Private Instruction: Voice	<p>Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, harp and percussion.</p>	Prerequisites: A grade of C or better in MUP151AA.	L+L 1.0 0.6 0.0

MUP201AD	Private Instruction: Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AD.	L+L 1.0 0.6 0.0
MUP201AG	Private Instruction: Harpsichord	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AG.	L+L 1.0 0.6 0.0
MUP201AJ	Private Instruction: Organ	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AJ.	L+L 1.0 0.6 0.0

MUP201AM	Private Instruction: Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AM.	L+L 1.0 0.6 0.0
MUP201AP	Private Instruction: Trumpet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AP.	L+L 1.0 0.6 0.0
MUP201AS	Private Instruction: French Horn	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AS.	L+L 1.0 0.6 0.0

MUP201AV	Private Instruction: Trombone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AV.	L+L 1.0 0.6 0.0
MUP201AY	Private Instruction: Euphonium	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151AY.	L+L 1.0 0.6 0.0
MUP201BB	Private Instruction: Tuba	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BB.	L+L 1.0 0.6 0.0

MUP201BE	Private Instruction: Flute	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BE.	L+L 1.0 0.6 0.0
MUP201BH	Private Instruction: Oboe	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BH.	L+L 1.0 0.6 0.0
MUP201BK	Private Instruction: Clarinet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BK.	L+L 1.0 0.6 0.0

MUP201BN	Private Instruction: Bassoon	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BN.	L+L 1.0 0.6 0.0
MUP201BQ	Private Instruction: Saxophone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BQ.	L+L 1.0 0.6 0.0
MUP201BT	Private Instruction: Violin	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BT.	L+L 1.0 0.6 0.0

MUP201BW	Private Instruction: Viola	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BW.	L+L 1.0 0.6 0.0
MUP201BZ	Private Instruction: Violoncello	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151BZ.	L+L 1.0 0.6 0.0
MUP201CC	Private Instruction: Contrabass	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151CC.	L+L 1.0 0.6 0.0



MUP201CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CF.	L+L 1.0 0.6 0.0
MUP201CI	Private Instruction: Percussion	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP151CI.	L+L 1.0 0.6 0.0
MUP201CJ	Private Instruction: Harp	Private Instruction emphasizing developmental improvement of musicianship, and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, percussion, and harp.	Prerequisites: A grade of C or better in MUP151CJ.	L+L 1.0 0.6 0.0

MUP201CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CK.	L+L 1.0 0.6 0.0
MUP201CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CL.	L+L 1.0 0.6 0.0
MUP201CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CM.	L+L 1.0 0.6 0.0

MUP201CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CN.	L+L 1.0 0.6 0.0
MUP201CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CO.	L+L 1.0 0.6 0.0
MUP201CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CP.	L+L 1.0 0.6 0.0

MUP201CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP151CQ.	L+L 1.0 0.6 0.0
MUP202AA	Private Instruction: Voice	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AA.	L+L 2.0 1.2 0.0
MUP202AD	Private Instruction: Piano	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AD.	L+L 2.0 1.2 0.0

MUP202AG	Private Instruction: Harpsichord	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AG.	L+L 2.0 1.2 0.0
MUP202AJ	Private Instruction: Organ	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AJ.	L+L 2.0 1.2 0.0
MUP202AM	Private Instruction: Guitar	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AM.	L+L 2.0 1.2 0.0

MUP202AP	Private Instruction: Trumpet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AP.	L+L 2.0 1.2 0.0
MUP202AS	Private Instruction: French Horn	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AS.	L+L 2.0 1.2 0.0
MUP202AV	Private Instruction: Trombone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AV.	L+L 2.0 1.2 0.0

MUP202AY	Private Instruction: Euphonium	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152AY.	L+L 2.0 1.2 0.0
MUP202BB	Private Instruction: Tuba	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BB.	L+L 2.0 1.2 0.0
MUP202BE	Private Instruction: Flute	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BE.	L+L 2.0 1.2 0.0

MUP202BH	Private Instruction: Oboe	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BH.	L+L 2.0 1.2 0.0
MUP202BK	Private Instruction: Clarinet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BK.	L+L 2.0 1.2 0.0
MUP202BN	Private Instruction: Bassoon	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BN.	L+L 2.0 1.2 0.0



MUP202BQ	Private Instruction: Saxophone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BQ.	L+L 2.0 1.2 0.0
MUP202BT	Private Instruction: Violin	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BT.	L+L 2.0 1.2 0.0
MUP202BW	Private Instruction: Viola	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BW.	L+L 2.0 1.2 0.0

MUP202BZ	Private Instruction: Violoncello	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152BZ.	L+L 2.0 1.2 0.0
MUP202CC	Private Instruction: Contrabass	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152CC.	L+L 2.0 1.2 0.0
MUP202CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CF.	L+L 2.0 1.2 0.0

MUP202CI	Private Instruction: Percussion	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152CI.	L+L 2.0 1.2 0.0
MUP202CJ	Private Instruction: Harp	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP152CJ.	L+L 2.0 1.2 0.0
MUP202CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CK.	L+L 2.0 1.2 0.0

MUP202CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CL.	L+L 2.0 1.2 0.0
MUP202CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CM.	L+L 2.0 1.2 0.0
MUP202CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CN.	L+L 2.0 1.2 0.0

MUP202CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CO.	L+L 2.0 1.2 0.0
MUP202CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CP.	L+L 2.0 1.2 0.0
MUP202CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP152CQ.	L+L 2.0 1.2 0.0

MUP209	Elements of Conducting	Essentials of conducting techniques used in choral and instrumental ensembles including terminology, interpretation, and styles	Prerequisites: None.	LEC 2.0 2.0 2.0
MUP217	Music Theatre: Broadway Solos	Study and in-class performance of scenes and solos from Broadway musical literature.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP218	Audition Techniques: Music Theater	Practice in the techniques of auditioning for musical theater. Identification and illustration techniques of the vocal and acting music theater audition.	Prerequisites: None.	L+L 1.0 3.0 3.0
MUP227	Class Guitar III	Additional fingerboard positions. Ensemble techniques and performance.	Prerequisites: A grade of C or better in MUP226 or permission of Instructor.	L+L 1.0 3.0 3.0
MUP228	Class Guitar IV	Advanced fingerboard positions. Duet and trio performances. Advanced ensemble techniques.	Prerequisites: A grade of C or better in MUP227 or permission of Instructor.	L+L 1.0 3.0 3.0
MUP231	Class Piano III	Development of intermediate piano techniques including selected solo literature, transposition of harmonic patterns, and secondary dominants.	Prerequisites: A grade of C or better in MUP132 or permission of Instructor.	L+L 1.0 3.0 3.0
MUP232	Class Piano IV	Continuation of Piano III including modulation techniques, improvisation of piano accompaniments, advanced chromatic harmony, and sight reading of advanced literature.	Prerequisites: A grade of C or better in MUP231 or permission of Instructor.	L+L 1.0 3.0 3.0
MUP233	Class Voice III	Interpretive singing through a closer examination of coloring, tone production, dynamics, and tempo indications.	Prerequisites: A grade of C or better in MUP134.	L+L 1.0 3.0 3.0
MUP234	Class Voice IV	Emphasis on the preparation of solo vocal literature for the purpose of evaluation and the integration of the music with the drama of the music.	Prerequisites: A grade of C or better in MUP233 or permission of Instructor.	L+L 1.0 3.0 3.0

MUP240	Piano Literature	Survey of solo literature written for the piano or for other keyboard instruments (i.e. harpsichord, clavichord) but suitable for performance on the piano. Emphasis on stylistic characteristics information correlating the composer's life and period with compositional techniques used.	Prerequisites: A grade of C or better in MUP140 or permission of Instructor.	LEC 2.0 2.0 2.0
MUP241	Piano Artistry	Overview of topics and issues including practice skills, rhythm, technique, musicianship such as dynamics, ornamentation, pedaling, touch, phrasing, articulation, voicing, balance, and the manipulation of time, necessary for pianists and piano teachers in working for expression, finesse and artistry.	Prerequisites: A grade of C or better in MUP240 or permission of Instructor.	LEC 2.0 2.0 2.0
MUP250AA	Survey of Diction for Singers (English)	Introduction to the use of phonetics in the study of English song literature	Prerequisites: None.	L+L 1.0 2.0 2.0
MUP250AB	Survey of Diction for Singers (Italian/Latin)	Introduction to the use of phonetics in the study of Italian/Latin song literature.	Prerequisites: None.	L+L 1.0 2.0 2.0
MUP250AC	Survey of Diction for Singers (German)	Introduction to the use of phonetics in the study of German song literature	Prerequisites: None.	L+L 1.0 2.0 2.0
MUP250AD	Survey of Diction for Singers (French)	Introduction to the use of phonetics in the study of French song literature	Prerequisites: None.	L+L 1.0 2.0 2.0
MUP251AA	Private Instruction: Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AA.	L+L 1.0 0.6 0.0

MUP251AD	Private Instruction: Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AD.	L+L 1.0 0.6 0.0
MUP251AG	Private Instruction: Harpsichord	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AG.	L+L 1.0 0.6 0.0
MUP251AJ	Private Instruction: Organ	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AJ.	L+L 1.0 0.6 0.0



MUP251AM	Private Instruction: Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AM.	L+L 1.0 0.6 0.0
MUP251AP	Private Instruction: Trumpet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AP.	L+L 1.0 0.6 0.0
MUP251AS	Private Instruction: French Horn	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AS.	L+L 1.0 0.6 0.0

MUP251AV	Private Instruction: Trombone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AV.	L+L 1.0 0.6 0.0
MUP251AY	Private Instruction: Euphonium	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201AY.	L+L 1.0 0.6 0.0
MUP251BB	Private Instruction: Tuba	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BB.	L+L 1.0 0.6 0.0

MUP251BE	Private Instruction: Flute	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BE.	L+L 1.0 0.6 0.0
MUP251BH	Private Instruction: Oboe	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BH.	L+L 1.0 0.6 0.0
MUP251BK	Private Instruction: Clarinet	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BK.	L+L 1.0 0.6 0.0

MUP251BN	Private Instruction: Bassoon	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BN.	L+L 1.0 0.6 0.0
MUP251BQ	Private Instruction: Saxophone	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BQ.	L+L 1.0 0.6 0.0
MUP251BT	Private Instruction: Violin	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BT.	L+L 1.0 0.6 0.0

MUP251BW	Private Instruction: Viola	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BW.	L+L 1.0 0.6 0.0
MUP251BZ	Private Instruction: Violoncello	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201BZ.	L+L 1.0 0.6 0.0
MUP251CC	Private Instruction: Contrabass	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201CC.	L+L 1.0 0.6 0.0

MUP251CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CF.	L+L 1.0 0.6 0.0
MUP251CI	Private Instruction: Percussion	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP201CI.	L+L 1.0 0.6 0.0
MUP251CJ	Private Instruction: Harp	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202CJ.	L+L 1.0 0.6 0.0

MUP251CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CK.	L+L 1.0 0.6 0.0
MUP251CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CL.	L+L 1.0 0.6 0.0
MUP251CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CM.	L+L 1.0 0.6 0.0

MUP251CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CN.	L+L 1.0 0.6 0.0
MUP251CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CO.	L+L 1.0 0.6 0.0
MUP251CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CP.	L+L 1.0 0.6 0.0



MUP251CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP201CQ.	L+L 1.0 0.6 0.0
MUP252AA	Private Instruction: Voice	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AA.	L+L 2.0 1.2 0.0
MUP252AD	Private Instruction: Piano	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AD.	L+L 2.0 1.2 0.0

MUP252AG	Private Instruction: Harpsichord	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AG.	L+L 2.0 1.2 0.0
MUP252AJ	Private Instruction: Organ	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AJ.	L+L 2.0 1.2 0.0
MUP252AM	Private Instruction: Guitar	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AM.	L+L 2.0 1.2 0.0

MUP252AP	Private Instruction: Trumpet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AP.	L+L 2.0 1.2 0.0
MUP252AS	Private Instruction: French Horn	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AS.	L+L 2.0 1.2 0.0
MUP252AV	Private Instruction: Trombone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AV.	L+L 2.0 1.2 0.0

MUP252AY	Private Instruction: Euphonium	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202AY.	L+L 2.0 1.2 0.0
MUP252BB	Private Instruction: Tuba	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BB.	L+L 2.0 1.2 0.0
MUP252BE	Private Instruction: Flute	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BE.	L+L 2.0 1.2 0.0

MUP252BH	Private Instruction: Oboe	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BH.	L+L 2.0 1.2 0.0
MUP252BK	Private Instruction: Clarinet	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BK.	L+L 2.0 1.2 0.0
MUP252BN	Private Instruction: Bassoon	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BN.	L+L 2.0 1.2 0.0

MUP252BQ	Private Instruction: Saxophone	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BQ.	L+L 2.0 1.2 0.0
MUP252BT	Private Instruction: Violin	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BT.	L+L 2.0 1.2 0.0
MUP252BW	Private Instruction: Viola	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BW.	L+L 2.0 1.2 0.0

MUP252BZ	Private Instruction: Violoncello	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202BZ.	L+L 2.0 1.2 0.0
MUP252CC	Private Instruction: Contrabass	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202CC.	L+L 2.0 1.2 0.0
MUP252CF	Private Instruction: Popular Music Bass Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CF.	L+L 2.0 1.2 0.0

MUP252CI	Private Instruction: Percussion	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202CI.	L+L 2.0 1.2 0.0
MUP252CJ	Private Instruction: Harp	Private Instruction emphasizing musicianship, literature, technique and performance. Four course sequence designed for university transfer equivalency. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp.	Prerequisites: A grade of C or better in MUP202CJ.	L+L 2.0 1.2 0.0
MUP252CK	Private Instruction: Popular Music Voice	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CK.	L+L 2.0 1.2 0.0



MUP252CL	Private Instruction: Popular Music Piano	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CL.	L+L 2.0 1.2 0.0
MUP252CM	Private Instruction: Popular Music Guitar	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CM.	L+L 2.0 1.2 0.0
MUP252CN	Private Instruction: Popular Music Drum	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CN.	L+L 2.0 1.2 0.0

MUP252CO	Private Instruction: Popular Music Production	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CO.	L+L 2.0 1.2 0.0
MUP252CP	Private Instruction: Popular Electronic Music Performance	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CP.	L+L 2.0 1.2 0.0
MUP252CQ	Private Instruction: Popular Music Turntablism	Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four-course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, harp, turntablism and electronic music.	Prerequisites: A grade of C or better in MUP202CQ.	L+L 2.0 1.2 0.0

MUP270	Musical Theatre Workshop	Workshop in the study and performance of Musical Theatre repertoire. Includes audition techniques, stage directions, character role development, rehearsal techniques, vocal acting styles and vocal technique, stage movement, crew roles, and performance.	Prerequisites: None.	L+L 2.0 5.0 5.0
MUP270AA	Musical Theatre Workshop	Workshop in the study and performance of musical theatre repertoire. Includes audition techniques, stage directions, character role development, rehearsal techniques, vocal acting styles and vocal technique, stage movement, crew roles, and performance.	Prerequisites: None.	LAB 1.0 3.0 3.0
MUP273	Musical Theatre Production	Principles and techniques for musical theatre production performance. Includes audition techniques, stage directions, character role development, rehearsal techniques, vocal acting styles and vocal technique, stage movement, crew roles, and performance.	Prerequisites: By audition.	LAB 1.0 5.0 5.0
MUP282AA	Volunteerism for Music: A Service Learning Experience	Service-learning field experience within private/public agencies, citizen volunteer groups, and on-campus sites. 50 hours of designated work per credit. Standard grading available according to procedures outlined in catalog.	Prerequisites: None.	LAB 1.0 1.0 0.0
MUP282AB	Volunteerism for Music: A Service Learning Experience	Service-learning field experience within private/public agencies, citizen volunteer groups, and on-campus sites. 50 hours of designated work per credit. Standard grading available according to procedures outlined in catalog.	Prerequisites: None.	LAB 2.0 2.0 0.0

MUP282AC	Volunteerism for Music: A Service Learning Experience	Service-learning field experience within private/public agencies, citizen volunteer groups, and on-campus sites. 50 hours of designated work per credit. Standard grading available according to procedures outlined in catalog.	Prerequisites: None.	LAB 3.0 3.0 0.0
MUP288	Basics of Piano Accompanying Vocal	Introduction to piano accompanying with emphasis on basic skills needed to accompany solo voice, choral singing, and congregational singing.	Prerequisites: A grade of C or better in MUP151AD or MUP231 or permission of Instructor.	LEC 2.0 2.0 2.0
MUP289	Basics of Piano Accompanying Instrument	Introduction to piano accompanying with emphasis on basic skills needed to accompany solo instruments, chamber music and musicals.	Prerequisites: A grade of C or better in MUP151AD or MUP231 or permission of Instructor.	LEC 2.0 2.0 2.0
MUP296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
MUP296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

MUP296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
MUP296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
MUP298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

MUP298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
MUP298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
MWR101	Introduction to Millwrighting I	History of millwrighting. Pre-industrialization trade, post-industrialization trade, industrial revolution. Structure of the organization. History, significance and benefits of labor unions. Successful and efficient labor relations. Millwrighting in relation to other construction trades. Building trades organizations.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR102	Introduction to Millwrighting II: OSHA Safety	Safe and proper use of hand and power tools. Safe work habits, first aid, and cardiopulmonary resuscitation (CPR) according to Occupational Safety and Health Administration (OSHA) regulations.	Prerequisites: A grade of C or better in (MWR101 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0

MWR103	Machinery Installation and Erection I	Basic machine shop skills, use of hand and power tools, machining equipment, and precision instruments in several practical exercises preparation for mastery of the skills. Machining operations involving the use of precision measuring, layout and machining procedures. Review of fundamental machine shop activities.	Prerequisites: A grade of C or better in (MWR101, MWR102 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR104	Machinery Installation and Erection II	Machinery installation skills used in manufacturing applications. Identification of component locations; measurements and tolerances; installation requirements and alignment of parts using machine drawings. Review of safety, precision measuring tools, rigging tasks, and machinery fastening methods.	Prerequisites: A grade of C or better in (MWR103 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR105	Millwrighting General Skills	Basic machine shop skills, use of hand and power tools, machining equipment, and precision instruments in several practical exercises preparation for mastery of the skills. Machining operations involving the use of precision measuring, layout and machining procedures. Review of fundamental machine shop activities.	Prerequisites: A grade of C or better in (MWR101, MWR102 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR106	Math for Millwrighting, Hand, Power and Precision Tools	Fundamental operations with whole numbers, common fractions, decimals, percentages, and ratio and proportion. Measurement tools. Fundamentals of Algebra, linear equations, includes applied math problems. Use, maintenance and safety procedures for common hand and power tools used in the construction industry.	Prerequisites: A grade of C or better in (MWR103 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR107	Drives, Pulleys and Belts	Identification, application, and installation skills for typical power drive systems. Demonstrations and practice exercises on the belt, chain and gear drives. Review of safety, rigging tasks, machinery fastening methods, and mechanical shop drawings.	Prerequisites: A grade of C or better in (MWR104 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0

MWR108	Blueprint Reading for Millwrighting I	Types of blueprints, sketching and basic print reading. Symbols for materials, construction details, standards, and specifications.	Prerequisites: A grade of C or better in (MWR101, MWR102 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR109	Turbine Familiarization	Function and performance of a General Electric Frame 5 Gas Turbine. Component descriptions and machine drawings, assembly/disassembly tasks and key bolting procedures.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR201	Optics and Machinery Alignment	Terms, characteristics, and operating principles for the transit and laser levels. Procedures for establishing machinery and equipment elevation and alignment. Measuring angles, using degrees, minutes, and seconds on veneer scales. Setting up levels, determining benchmarks, taking and recording elevation readings.	Prerequisites: A grade of C or better in (MWR101, MWR102 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR202	Conveyor Systems	Proper layout and component alignment of machinery, equipment, and conveyor systems. Identification of proper alignment procedures. Belt splicing. Analysis of effects of improper installation on maintenance and lifespan of equipment and conveyor systems.	Prerequisites: A grade of C or better in (MWR104 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR203	Speciality Machinery I	Fundamentals and theory of hydraulics and pneumatics. Types, components, construction, and assembly of pumps and compressors. Inner workings of industrial pumps and compressors. Auxiliary equipment and accessories.	Prerequisites: (Registered apprentice status and a grade of C or better in MWR202) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
MWR204	Speciality Machinery II	Design, terminology, installation and operation of centrifugal and axial draft fans, monorail systems, steam turbines and generators. Layout and fabrication of monorail hangers, turns, and dips	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0



MWR205	Machinery Shaft Alignment	Terms, characteristics, and methods for aligning machine shafts. Procedures for sequence performance, conventional dial indicator and computer aided. Setting up indicators, taking and recording indicator readings and determining alignment correction.	Prerequisites: A grade of C or better in (MWR101, MWR102 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR206	Rigging Hardware and Procedures	Lifting theory and practical rigging methods and procedures, design, characteristics, and safe working load of lifting hardware. Rigging attachment procedures, lifting equipment, limits of operation and communication practices. United Brotherhood of Carpenters (UBC) rigging qualification cards.	Prerequisites: A grade of C or better in (MWR105 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR207	Advanced Precision Alignment Instruments	Computer aided transit and laser levels. Procedures for using Computer-aided Design (CAD), Global Positioning System (GPS) and Satellite instruments and computer programs using metric circle, GPS coordinates, degrees, minutes, and seconds on veneer scales. Utilization of computer programs for layout.	Prerequisites: A grade of C or better in (MWR201 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR208	Pumps, Compressors and Flow Seals	Fundamentals and theory of hydraulics and pneumatics. Types, components, construction, and assembly of pumps and compressors. Inner workings of industrial pumps and compressors. Design and installment of auxiliary equipment and accessories.	Prerequisites: A grade of C or better in (MWR206 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR209	Introduction to Wind Turbines	Design, function and installation of wind turbine equipment. Methods, sequences and procedures for housings, bolting, power, drive assembly and other components. Jobsite safety, print interpretation, material identification, and use of system devices and maintenance criteria. Completion of hands-on component installation projects.	Prerequisites: A grade of C or better in (MWR109 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0

MWR210	Introduction to Solar Installations	Characteristics, design, and installation of concentrated photovoltaic (CPV) components. Methods, sequences, and procedures for panel and tracking assembly including jobsite safety, print interpretation, material identification, and use of system devices and testing criteria. Construction of and troubleshooting of selected solar installation projects.	Prerequisites: A grade of C or better in (MWR106, MWR108 and registered apprentice status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
MWR298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
MWR298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

MWR298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
NAV101	Elementary Navajo I	Basic grammar, pronunciation, and vocabulary of the Navajo language. Practice of listening, speaking, reading, and writing skills. Includes the study of the Navajo culture with participation in an off-campus Navajo cultural event	Prerequisites: None.	LEC 4.0 4.0 4.0
NAV102	Elementary Navajo II	Continued study of grammar, pronunciation, and vocabulary of the Navajo language. Emphasis on listening, speaking, reading, and writing skills.	Prerequisites: A grade of C or better in NAV101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
NAV115	Beginning Navajo Conversation I	Beginning conversational Navajo with emphasis on basic listening and speaking skills, including basic pronunciation, vocabulary, sentence structure, and cultural awareness	Prerequisites: None.	LEC 3.0 3.0 3.0
NAV116	Beginning Navajo Conversation II	Continued development of speaking and listening skills for effective communication in Navajo. Focuses on vocabulary for home, community, schools, and businesses	Prerequisites: A grade of C or better in NAV115 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
NAV201	Intermediate Navajo I	Continued study of the Navajo language. Continued practice and development of listening, speaking, reading, and writing skills. Emphasis on fluency and accuracy of the Navajo language. Includes continued study of Navajo people and cultures.	Prerequisites: A grade of C or better in NAV102 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0

NAV202	Intermediate Navajo II	Continued study of the Navajo language. Continued practice and development of listening, speaking, reading, and writing skills. Emphasis on fluency and accuracy of the Navajo language. Includes continued study of Navajo people and cultures.	Prerequisites: A grade of C or better in NAV201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
NAV298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
NAV298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
NAV298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

NCE101	Introduction and Overview of Cancer Disease	Introduction and overview of the disease and treatment of cancer including cancer origin, development, pathology, staging, hematopoiesis, epidemiology, diagnosis modalities, treatment options, cancer research and differentiation of solid tumors versus nonsolid tumors. Effective analysis, synthesis, and evaluation of topics through written discourse.	Prerequisites: Health care professional or permission of Department or Division.	LEC 2.0 2.0 2.0
NCE102	Exploring the World of Nursing for the High School Student (Summer Camp)	Overview of the philosophy, core values, policies, competencies and curricular components of the Maricopa Community College District Nursing Program (MCCDNP). Introduce the use of the nursing process, utilization of critical thinking skills, and sound decision-making principles in the clinical setting. Examine the communication process, time management, stress reduction, and the transition in role expectations between High school and College Students. Explore the roles of Licensed Practical Nurse (LPN), Registered Nurse (RN) and advance practice nursing. Clinical experience (job shadowing) will be held in participating hospitals.	Prerequisites: None. Corequisites: HCC/RES109.	LAB 1.5 4.5 4.5

NCE103	Psychiatric Technician Overview	Students learn to care for patients with a wide variety of mental illness to include anxiety, mood, personality and psychotic disorders, as well as post-traumatic stress syndrome and behavioral issues. Psychiatric technicians follow physician/nurse instructions and hospital procedures. Identification of modalities to monitor patient's mental and emotional status, physical symptoms related to mental disorders, and recognition of medication side effects. A variety of therapies will be covered to include rehabilitation and treatment programs, as well as recreational activities used as treatment options.	Prerequisites: None.	LEC 2.0 2.0 2.0
NCE105	Job Preparation for the Health Care Professional	Designing and creating resumes/curriculum vitae, job interview skills, electronic portfolio, and job searching in the health care market. Appearance, dress, and questioning skills emphasized. Role-playing exercises of correct interviewing techniques.	Prerequisites: None.	LEC 0.5 0.5 0.5
NCE110	Basic First Aid	Basic first aid principles and interventions for the lay person. Topics include lacerations and bleeding control, seizures, chest pain, heat related problems, orthopedic injuries, and treatment of bites, stings, and burns	Prerequisites: None.	LEC 0.5 0.5 0.5

NCE112	Wilderness First Aid	Knowledge and skills to care for an injured or suddenly ill person in remote locations. Treatment of wounds, bone, joint and soft-tissue injuries. Treatment and immobilization for head and neck injuries. Signs, symptoms and treatment for a seizure and animal bites and stings. Assessment and treatment of patients with chest pain, diabetes and asthma. Treatment for specific environmental emergencies	Prerequisites: None.	LEC 1.0 1.0 1.0
NCE115	Nursing Healthcare Transition and Safe Passage	Overview of American nursing practice, including historical and current perspectives. Key components of transitioning to Registered Nurse role in the United States. Contrasting Registered Nurse roles in US and in other countries. Career development and successful transitioning to role of nurse in the United States.	Prerequisites: Permission of Instructor.	LEC 2.0 2.0 2.0
NCE118	Ventilator Management for Nurses	Nursing care and management of the mechanically ventilated patient. Adjuncts to airway management including types and indications for use. Initiation, management and weaning of mechanical ventilation	Registered nurse or licensed practical nurse or respiratory therapist.	LEC 0.5 0.5 0.5
NCE131	Recognizing Skin Rashes in the School Aged Child	Recognition of common childhood rashes, identify allergic rash manifestations, communicable rashes and infectious rashes.	Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 0.5 0.5 0.5

NCE150	Advanced Placement: Nurse Assisting	Prepares the advanced placement nursing assistant student for the Certified Nursing Assistant (CNA) certification or Licensed Nursing Assistant (LNA) examination. The student will care for clients across the wellness/illness continuum within the scope of practice of the CNA/LNA. Includes basic problem solving processes specific to meeting the basic and holistic needs of clients, therapeutic communication skills, as well as interventions to ensure the needs and safety of the client. Provides opportunity for the student to show proficiency in the performance of basic nursing assistant skills and procedures through laboratory activities and participation in the care of clients. Licensing is the exclusive responsibility of the Arizona State Board of Nursing.	Prerequisites: One year full-time employment OR two years part-time employment of direct patient care within the past five years OR students who have successfully completed course work that included direct patient care experiences in allied health, medicine or nursing in the past five years, OR permission of the Division Chairperson.	L+L 2.0 4.4 4.0
NCE153	Restorative Nursing Assistant	Additional skills for nurse assisting in restorative care settings, such as reinforcing client performance of Activities of Daily Life and assistive efforts for optimizing client independence.	Prerequisites: Permission of Department or Program Director, or a grade of C or better in NCE150 or NUR158 or current CNA certificate. CNA certificate must remain in active status throughout the term of the course.	L+L 1.75 1.75 1.75
NCE161	Foundation in Patient Advocacy	Foundational knowledge and skills needed for the emerging profession of patient Advocacy. Role of the patient advocate, health care delivery methods, best practices, consumer and provider perspectives, insurance benefits and costs, and legal implications.	Prerequisites: None.	LEC 2.0 2.0 2.0
NCE165	Legal Aspects of Nursing	Principles of legal aspects in nursing, rules of liability, negligent conduct and principles of malpractice. Review of the scope of nursing practices, and other legal matters.	Prerequisites: None.	LEC 1.0 1.0 1.0



NCE168	End of Life Care Training	Nursing care at the end of life, pain management, symptom management, ethical issues, communication, cultural considerations, loss, grief and bereavement. Achievement of quality palliative care and preparation for and care at the time of death	Prerequisites: None.	LEC 1.0 1.0 1.0
NCE170	Pharmacology for Nurses	Review and update of selected pharmacological classifications. Includes dosages, administration methods and reactions	(Current license as Practical Nurse or Registered Nurse) or registered as student nurse or permission of Instructor.	LEC 3.0 3.0 3.0
NCE173	Venipuncture	Development of clinical skills for venipuncture. Emphasis on review of anatomy and physiology of vasculature of the arm, medical asepsis, and procedure.	Prerequisites: Permission of Instructor.	LEC 1.0 0.5 0.5 LAB 0.0 24.0 1.5
NCE175	Licensed Practical Nurse Update	Role and responsibilities of the Licensed Practical Nurse. Application of nursing care for medical-surgical patients, use of the nursing process and administration of medications. Includes expanded role of the Licensed Practical Nurse, principles of safe nursing practice, legal/ethical issues, human growth and development, therapeutic communication and physical assessment skills. For Licensed Practical Nurses returning to active nursing in the acute care setting.	Prerequisites: Current license as a Practical Nurse.	LEC 10.0 6.0 6.0 LAB 0.0 12.0 12.0
NCE200	Contemporary Leadership Concepts for Health Care	Introduction to leadership and management concepts for work-readiness in health care fields. Professional role development of the beginning registered nurse. Includes organizational design and governance as well as leadership and management theories and qualities for the health care employee.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 1.0 1.0 1.0

NCE201	Physical Assessment	Basic health assessment by collecting health histories and performing physical examinations. Relationship of sciences and humanities to holistic aspects of health. Assessment for normal, variations of normal, and deviations from normal findings	Current Practical Nurse (PN) or Registered Nurse (RN) license or permission of Instructor.	LEC 3.0 3.0 3.0
NCE202	Overview of Physical Assessment of the Adult Client	Overview of interviewing techniques and approaches to documenting a comprehensive health history and physical examination assessment techniques. Emphasis on the nursing process and health assessment skills. Performance of beginning level physical assessment.	(Current Nursing or Allied Health student, or current Arizona Registered Nurse (RN) license, or Licensed Practical Nurse (LPN) license, or recent graduate of an accredited nursing program) and permission of Instructor.	LEC 1.0 1.0 1.0
NCE203	Interpretation of Laboratory Diagnostic Examinations	Utilization of laboratory diagnostic examination results for evaluation of patient conditions. Normal results for selected body fluids. Abnormal results related to pathophysiological conditions of adults. Incorporation of results of examinations to assess, modify, and evaluate therapy for patients with specific conditions	Registered Nurse or Licensed Practical Nurse Nursing students or permission of Instructor.	LEC 0.5 0.5 0.5
NCE204	Hemodynamics	Events of the cardiac cycle related to normal hemodynamic waveforms and pressures. Purpose, procedure and potential complications related to hemodynamic invasive lines. Trouble shooting and preventative procedures for hemodynamic invasive lines. Normal and abnormal pressure forms related to various forms of pathophysiology. Treatments and interventions for specific cardiac diseases. Impact of paced rhythms, and intraaortic balloon pumps on normal hemodynamic waveforms. Safe removal procedure for hemodynamic devices	Registered nurse (RN) respiratory therapist or cardiovascular technician with knowledge of dysrhythmia recognition.	LEC 1.0 1.0 1.0

NCE205	Emergency Room Nursing	Roles of emergency health team. Medical/legal issues specific to emergency room care. Triage classifications for specific emergency room/department situations, nursing care for selected conditions, trauma, and disease processes. Organ donation issues, discharge procedures and client education	Registered Nurse (RN) or Licensed Practical Nurse (LPN) or currently enrolled in a nursing program or permission of Instructor.	LEC 4.0 4.0 4.0
NCE207	Recognition and Nursing Management of the Deteriorating Patient	This course will provide a scenario/simulation-based problem solving approach to recognize and manage the patient who has the potential for a deteriorating status in a wide variety of concept-oriented conditions. The ultimate goal is to prevent or reverse the clinical deterioration and achieve optimum patient outcomes.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or registered as student nurse or permission of Instructor.	LEC 0.5 0.5 0.5
NCE208	Neonatal Pathophysiology	Pathophysiology and physiologic adaptations of the neonate to include assessment and management of respiratory, cardiac, hematological, immunological, neurological and fluid and electrolyte disorders. Acid-base regulation and hemodynamic dysfunction	Registered therapist registered nurse (RN) or pharmacist with neonatal experience.	LEC 3.0 3.0 3.0
NCE209	SCHOOL HEALTH ASSISTING	The role of the school health assistant. Legal issues related to the school health setting. Performance of vision, hearing, and scoliosis screenings. Documentation, vital signs, triage guidelines in the school health setting. Common diseases that affect school-age children. Child abuse issues and protocol. Common medications and their side effects. Documentation and procedures related to drug administration	Prerequisites: None.	LEC 3.0 3.0 3.0
NCE210	School Nurse Emergency Assessment Skills	Update of emergency assessment in the school setting. Includes emergency assessment of seizures, asthma, head and neck injuries, heat-related problems, bites, stings, and burns, and orthopedic injuries	School nurse school health aide other health professionals or permission of Instructor.	LEC 1.0 1.0 1.0

NCE212	Patient Education	Current concepts relevant to planning and implementing a teaching plan, and the role the nurse has in patient education. Patient education instructional methods, educational theories, nursing process and case management in patient education. Focus on patient advocacy through education.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 0.5 0.5 0.5
NCE213ND	Long-Term Care Nursing Update	Medicare and insurance documentation procedures for the long-term care patient. Medical-legal issues that pertain to the long-term care patient. Specific nursing procedures performed for the long-term care patient	Registered nurse (RN) licensed practical nurse (LPN) or health worker currently employed in a long-term care setting.	LEC 0.5 0.5 0.5
NCE214CA	Basic Electrocardiogram Interpretation	Focuses on recognition of common cardiac rhythms. Includes major and minor reportable occurrences which affect a patient's status and priority interventions.	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
NCE214ME	Advanced Metrology and IV Drug Therapy	Advanced course in intravenous and pediatric calculations. Preparation for NCLEX-RN exam and Registered Nurse review of complex medication calculations. Emphasis on safe clinical practice using the nursing process to analyze and calculate pediatric fractional doses and critical care medications	Registered nurse or current student in Associate Degree Nursing program.	LEC 1.0 1.0 1.0
NCE214MF	Advanced IV Drug Therapy	Advanced course in drug calculation and administration using the ratio/proportion and dimensional analysis methods. Focus on intravenous medications and titrations for critical care, pediatric and high risk obstetric medications	Current student in Associate Degree Nursing program or permission of Instructor.	LEC 0.5 0.5 0.5

NCE214MI	Math and Medications for Intermediate Nursing Students	Focus on basic mathematical concepts to calculate metric- apothecary conversion, dosage problems, intravenous flow rates using the ratio/proportion and dimensional analysis methods. These calculations will focus application to acute care, long-term care, and pediatric specialty areas	Current student in Nursing program or permission of Department or Division.	LEC 0.5 0.5 0.5
NCE214MM	Math/Methods of Drug Calculation	Focuses on basic mathematical concepts using decimals and fractions to calculate fractional and metric-apothecary conversion dosage problems and intravenous flow rates. Emphasis on the dimensional analysis problem solving method	Prerequisites: None.	LEC 1.0 1.0 1.0
NCE214MO	Math/Methods for Beginning Nursing Students	Focus on basic mathematical concepts to calculate metric- apothecary conversion, dosage problems and intravenous flow rates. Includes calculation problems with oral, parenteral, and reconstitution medications. Emphasis on the ratio/proportion and dimensional analysis problem solving methods	Current student in Associate Degree Nursing program or permission of Instructor.	LEC 0.5 0.5 0.5
NCE214ND	Nursing Developmental Skills for Health Providers	Updating specific nursing areas in order to enhance success in nursing courses and/or employment.	Prerequisites: Previous coursework or experience in nursing related skills or permission of Instructor.	LEC 1.0 1.0 1.0

NCE214OP	Orientation to Nursing Program	Overview of the philosophy, mission, vision, Nurse of the Future Competencies, student learning outcomes, and the constructivist framework of the Maricopa Nursing program. Student expected to be prepared with basic concepts of therapeutic communication, the nursing process, pharmacology, introductory concepts of intravenous therapy and knowledge of fundamental concepts. Primary content areas: nursing process, with emphasis on the use of the nursing process to develop a plan of care; utilization of critical thinking skills; problem-solving strategies, the communication process; psychiatric nursing competencies and role transition between LPN and RN scope of practice.	Prerequisites: Designee/advanced placement into the Nursing Program or permission of the Nursing Director.	L+L 3.0 75.0 5.0
NCE214PO	Tutored NCLEX Review For Nursing Students	Brief review of nursing care by systems using an NCLEX review book. Focus on nursing process, prioritizing, and critical thinking related to application of nursing care in case study situations. Also practice multiple-choice questions	Currently enrolled nursing student, or permission of Instructor.	LEC 2.0 2.0 2.0
NCE215AA	Nursing Update: Pain Management	Comprehensive pain assessment and pain management. Pharmacological agents, treatment modalities, and delivery systems. Regulatory agency policies, standards of care, and documentation guidelines.	Prerequisites: Registered Nurse or Licensed Practical Nurse or currently enrolled in a nursing program or permission of Instructor.	LEC 0.5 0.5 0.5
NCE215AB	Nursing Update: Wound and Skin Care	Wound and skin assessment and documentation guidelines. Skin care protocols and interventions to prevent pressure ulcers and promote optimal healing. Wound care products and treatment options.	Prerequisites: Registered Nurse or Licensed Practical Nurse or currently enrolled in a nursing program or permission of Instructor.	LEC 0.5 0.5 0.5

NCE215AC	Nursing Update: Stoma Care	Care of the patient with fecal and urinary diversions. Appliance selection, stoma care, and management of potential complications. Includes nutritional, psychological, and educational aspects of care.	Prerequisites: Registered Nurse or Licensed Practical Nurse or currently enrolled in a nursing program or permission of Instructor.	LEC 0.5 0.5 0.5
NCE215AD	Nursing Update: Advances in Diabetes Management	Diabetes management and implications. Risk factors of diabetes and lifestyle modifications. Medication updates and new technological advances for the treatment of Type I and Type II diabetes.	Prerequisites: None.	LEC 0.5 0.5 0.5
NCE215AE	Nursing Update: Cardiac Care	Provides nurses with up-to-date information on prevention, diagnosis, and treatment of cardiovascular and related diseases.	Prerequisites: Registered Nurse (RN) or Licensed Practical Nurse (LPN) or other licensed personnel working with cardiac patients.	LEC 0.5 0.5 0.5
NCE215ND	Nursing Skills Update	Enhancement and reinforcement of specific nursing skills. Special needs patients, patient assessment techniques, medicolegal responsibilities, and diagnostic procedures.	Prerequisites: None.	LEC 0.5 0.5 0.5
NCE216AA	School Health Update: Assessment Skills	Assessment skills for the school health setting. Assessment and management of selected school health problems including abdominal pain, head and spinal cord injuries, and environmental hazards.	Prerequisites: Registered Nurse or Licensed Practical Nurse or currently enrolled in a nursing program or permission of Instructor.	LEC 0.5 0.5 0.5
NCE216ND	School Nurse Skills Update	Enhancement and reinforcement of specific skills encountered in the school health setting. Special needs of physically and emotionally disabled children. Review of special procedures and medications used with special children populations.	Prerequisites: Current school nurse or school health aide.	LEC 0.5 0.5 0.5

NCE218	Ventilator Management for Critical Care and Emergency Room Nurses	Patient care including indications, management and complications in mechanically ventilated patients. Types of mechanical ventilation, pharmacological management, care of the mechanically ventilated patient, intubation and extubation, and tracheostomy management.	Prerequisites: Health care professional, or permission of Department or Division.	LEC 0.5 0.5 0.5
NCE219	Advanced First Aid for School Health Staff	Advanced first aid principles and interventions for staff working in a school health setting. Topics include assessment and management of medical emergencies such as asthma, anaphylaxis, environmental emergencies, seizures and playground trauma	(Basic first aid training or experience) or permission of Instructor.	LEC 0.5 0.5 0.5
NCE220	Advanced IV Therapy Skills for RNs	Intravenous (IV) therapy skills utilized by the Registered Nurse in home health, long term care, and the acute care setting. Includes principles of care for specific central venous catheters, and infusion pumps. Also, legal implications of advanced IV practice	Current license as registered nurse or enrolled in an accredited RN program or permission of Instructor.	LEC 0.5 0.5 0.5
NCE221	Patient Care Technician Skills	Patient care technician skills and techniques which include: drawing blood, performing a variety of specimen collections, observing and reporting patient status, assisting in patient preparation and electrode placement for electrocardiograms, suctioning patients, performing urinary catheterizations, documentation and reporting of skill completion, maintaining patient confidentiality, and recognizing legal and ethical commitments related to patient care technician skills.	Prerequisites: Certified Nurse Assistant (CNA), Nurse Assistant course or equivalent within the past year, and permission of Continuing Education Program Director and/or Instructor.	LEC 3.0 2.5 2.5 LAB 0.0 24.0 1.5



NCE223	LPN-IV Therapy and Medication Skills	Terminology and anatomy related to intravenous therapy. Drug response factors, dosage, calculations, intravenous site dressing change, intravenous administration equipment, and initiating intravenous therapy. Documentation and procedures for laboratory check lists. Meets state nursing board requirements for initiating intravenous therapy and administering intravenous medications.	Prerequisites: Current license as Practical Nurse or permission of Instructor.	LEC 2.5 2.0 2.0 LAB 0.0 24.0 1.5
NCE224	Nursing Case Management	Case management and managed care responsibilities, insurance strategies, utilization management, legal and ethical issues, quality improvement and discharge planning	Registered Nurse (RN) Licensed Practical Nurse (LPN) social worker or permission of Instructor.	LEC 3.0 3.0 3.0
NCE225	Introduction to School Nursing	Registered nursing skills necessary to prepare for employment in a School Health Setting. Triageing, school health office management skills, and legal issues and scope of practice of the school nurse. Health screening basics and immunization protocols, emergency response skills, and health teaching.	Current Arizona Registered Nurse (RN) license, or Licensed Practical Nurse (LPN) license, or recent graduate of an accredited nursing program, or permission of Instructor.	LEC 2.0 2.0 2.0
NCE226	Pediatric Nursing Clinical Skills	Clinical application of nursing theory to the pediatric patient. Focuses on effective physical assessment techniques, and changes in nursing skills for the pediatric patient.	Prerequisites: Registered Nurse (RN), or Licensed Practical Nurse (LPN), or permission of Instructor. Corequisites: NCE227.	LAB 1.0 45.0 3.0
NCE227	Science of Pediatric Nursing	Preparation for relocation to the pediatric unit the hospital nurse. Application of pediatric nursing theory based upon the nursing process.	Prerequisites: Registered Nurse (RN), or Licensed Practical Nurse (LPN), or permission of Instructor. Corequisites: NCE226.	LEC 1.0 1.0 1.0

NCE228	Holistic Nursing Fundamentals-Certification Exam Preparation	Preparation for the holistic nursing certification examination. Includes holistic nursing philosophy, foundations, core values, standards, and principles. Covers self-care and self-reflection, theories, Integrative Health and Wellness Assessments (IHWA), in addition to development of, goals, and strategies for implementation of individualized care plans. Also includes complementary modalities as well as theories and research in the field of holistic nursing.	Prerequisites: None.	LEC 3.0 3.0 3.0
NCE230	PICC Line Insertion	Overview of the care, maintenance and insertion of Peripherally Inserted Central Catheter (PICC) lines. Advantages of PICC lines, legal implications, types, as well as anatomy and physiology for proper insertion.	Prerequisites: Current license as a Registered Nurse.	L+L 0.5 24.0 1.5
NCE231	Pharmacology for Critical Care and Emergency Room Nurses	Pharmacology update for emergency department and critical care personnel on new drug therapies and related patient care protocols. Pharmacological management of cardiac and respiratory system disorders, complications, and emergency interventions. Patient management protocols for conscious sedation. New pharmacological agents for the treatment and management of diabetes and other endocrine disorders	Registered Nurse or permission of Instructor.	LEC 1.0 1.0 1.0
NCE232	Health Assessment of the School Age Child	Comprehensive health assessment foundation. Development of interviewing skills, obtaining health histories, and conducting physical examinations on the school age child. Identification and management of minor illnesses and health problems common to school age children	School nurse or current Registered Nurse (RN) licensure.	LEC 3.0 3.0 3.0

NCE233	Nursing Care of the Special Needs Child	Overview of congenital and acquired pediatric conditions, chronic illnesses and physical challenges that may lead to developmental delay or educational dysfunction. Application of the nursing process to provide care for the special needs child. Developmental assessment tools, skilled nursing interventions and environmental factors. Resources for disabled and chronically ill children through family, educational system and the community	School nurse or current registered nurse (RN) licensure.	LEC 3.0 3.0 3.0
NCE234	Fundamentals of School Nursing Practice	Assessment, development, implementation and evaluation of school health programming. Focus on nursing theory as it relates to school health programming. Program management, professional development, dealing with change, health education, interdisciplinary interaction and the role of the professional nurse in the school setting	School nurse or current registered nurse (RN) licensure.	LEC 3.0 3.0 3.0
NCE235	Conscious Sedation	Conscious sedation criteria and protocols. Nursing responsibilities and interventions pre-, intra- and post- procedure. Medications commonly used for conscious sedation, monitoring equipment, potential complications and required documentation	Registered nurse (RN) or permission of Instructor.	LEC 0.5 0.5 0.5
NCE237	Care and Management of Vascular Access Devices	Types of vascular catheters, types of clients who use them and clinical indications for each. Care for the different devices, differences in tip locations and the types of infusion therapies infused through each device.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or registered as student nurse or permission of Instructor.	LEC 0.5 0.5 0.5

NCE242	Twelve Lead Electrocardiogram (EKG) Interpretation	Normal and abnormal wave forms of the cardiac cycle. Normal and abnormal heart axis. Differences between ventricular and supraventricular tachycardia. Various types of blocks. Identification of heart chamber enlargement. Injury, ischemic and necrotic heart patterns. Effect of specific drugs and electrolyte disorders on electrocardiograms (EKG)	Basic electrocardiogram (EKG) experience or previous course work in dysrhythmia interpretation or permission of Instructor.	LEC 0.5 0.5 0.5
NCE243	Nursing Skill and Competency Review	Resume writing, interpersonal and therapeutic communication, teamwork concepts, IV Skills and pharmacological review. Central line catheter care, nutritional management, urinary catheterization, NG insertion and suctioning, respiratory management, basic wound care, and patient assessment skills.	Prerequisites: Permission of Instructor.	LEC 3.5 2.5 2.5 LAB 0.0 90.0 6.0
NCE245	Introduction to Holistic Nursing	Philosophy and theories of holism applied to nursing practice. Focus on the physical, emotional, psychological, social, and spiritual needs of the client. Emphasis on application of the nursing process from a holistic perspective. Healing relationship model, self-care concept, nurse-patient communication, health care ethics, therapeutic environment, and cultural sensitivity.	Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 1.0 1.0 1.0
NCE246AA	Basic Fetal Heart Monitoring	Application of basic concepts and knowledge of fetal monitoring to assist the antepartum and intrapartum nurse in providing effective nursing care to ensure fetal well-being.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 1.0 1.0 1.0

NCE249	Basic Critical Care Nursing	Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the following systems: cardiac, respiratory, neuroscience, gastrointestinal, renal, endocrine and hematology, hemodynamics and ventilator management	Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.	LEC 4.0 4.0 4.0
NCE249AA	Critical Care: Cardiac	Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the cardiac system	Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.	LEC 1.0 1.0 1.0
NCE249AB	Critical Care: Respiratory	Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the respiratory system	Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.	LEC 1.0 1.0 1.0
NCE249AC	Critical Care: Neurologic	Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the neurologic system	Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.	LEC 1.0 1.0 1.0
NCE249AD	Critical Care: Endocrine and Renal	Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the endocrine and renal systems	Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.	LEC 0.5 0.5 0.5

NCE249AE	Critical Care: Gastrointestinal	Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the gastrointestinal system	Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.	LEC 0.5 0.5 0.5
NCE251	Telemetry Nursing	Cardiac anatomy and physiology and the conduction system. Elements of a cardiac assessment. Recognition of arrhythmia and cardiac abnormalities seen on electrocardiogram (EKG). Indications for temporary and permanent pacing. Drug groups and their interactions specific to the cardiac patient. Normal and abnormal lab values for the cardiac patient. Pre- and post-procedure care for cardiac procedures. Nursing interventions and emergency treatment.	Prerequisites: Registered Nurse (RN) and a grade of C or better in NCE214CA or equivalent.	LEC 3.0 3.0 3.0
NCE255	Death, Grief, and Bereavement	Grief and bereavement care for the client and family. Ethical and cultural issues in terminal care, children and death, AIDS related death issues, suicide, homicide and survivor interventions	Prerequisites: None.	LEC 2.0 2.0 2.0
NCE257	Science of Maternity Nursing	Preparation for relocation to the maternal/child health unit the hospital nurse. Application of maternal/child nursing theory based upon the nursing process.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 1.0 1.0 1.0
NCE258	Maternity Nursing Clinical Skills	Clinical application of nursing theory to the maternal/child patient. Focuses on effective physical assessment techniques, determining neonatal status, and maternal physiological and psychological well-being.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LAB 1.0 1.0 1.0

NCE259	Advanced Critical Care Nursing	Provides the experienced Critical Care Nurse with an opportunity to build on basic critical care knowledge. Advanced concepts in assessment, hemodynamic monitoring, pathophysiology of disease processes, and use of the Nursing Process for critically ill patients with complex, multisystem disorders. Designed to help prepare experienced Critical Care Nurses for the certification examination for Critical Care Nursing offered by the American Association of Critical Care Nurses.	Prerequisites: A grade of C or better in NCE249 or Registered Nurse working in Critical Care or permission of Instructor.	LEC 4.0 4.0 4.0
NCE260	Intra-Aortic Balloon Pump	Mechanics of the cardiac cycle. Physiologic effects of the intra-aortic balloon pump. Indications and contraindications. Components, operation, care and maintenance of the intra-aortic balloon pump. Complications and nursing implications with the use of the intra-aortic balloon pump	Registered Nurse (RN) or cardiovascular technician who has completed a Basic EKG course and has Critical Care Training.	LEC 0.5 0.5 0.5
NCE261	Ultrasound-Guided Peripheral Intravenous Access	Technique of ultrasound-guided peripheral venous access. Client selection for procedure, selection of vasculature, and troubleshooting using ultrasound guidance equipment. Use of equipment and hands-on, simulated practice of catheter placement.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or registered as student nurse or permission of Instructor.	L+L 0.5 24.0 1.5
NCE262	Legal Medical Consulting	Role of the legal medical consultant in specific litigation. Importance of the law library. Definition of ethics, professionalism, standards of practice, discovery and disclosure. Steps and procedures involved with legal research. Role of the legal medical expert as a witness. Alternative conflict resolution. Role of independent medical examination. Role of the insurance industry and risk management in legal medical issues	Licensed medical personnel or permission of Instructor.	LEC 3.0 3.0 3.0

NCE264	Advanced Legal Medical Consulting/Civil Procedure	Reinforcement and broadening of knowledge and skills required for a career in legal medical consulting. Civil litigation process from initial client contact, discovery, and trial to post trial period. Intensive case analysis and thorough exploration of legal theory, procedure, and strategy. Discussion of the Federal and Arizona Rules of Civil Procedure and hands on experience in the preparation of legal documents and the trial notebook	Prerequisites: A grade of C or better in NCE262 or equivalent.	LEC 3.0 3.0 3.0
NCE265	Triage Skills for Urgent Care Staff	Identification of high risk aspects of frequent medical complaints. Instruction in avoiding errors when triaging patients in the urgent care setting.	Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 0.5 0.5 0.5
NCE266	Recognition and Management of the Patient with Allergies	Allergy process, types of allergies and their presentations, levels and types of reactions, as well as treatment, diagnostic testing and prevention strategies.	Prerequisites: Health care professional or permission of Department or Division.	LEC 0.5 0.5 0.5
NCE267	IV Medication Administration and Advanced Metrology	Knowledge and skills to safely prepare and administer intravenous medications and solutions. Includes advanced metrology to accurately calculate IV drug dosages and infusion rates.	Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	L+L 1.0 2.0 2.0
NCE268	Non Rash Infectious Diseases in the Pediatric Patient	Epidemiology and symptomology of non rash producing infectious diseases often seen in children and identify ways to prevent, reduce, and control their spread. Meningococcal disease, Tuberculosis, influenza, Methicillin Resistant Staph Aureus (MRSA), pertussis, conjunctivitis, mononucleosis, streptococcal infections, hepatitis, and enterovirus D68.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 0.5 0.5 0.5



NCE271	Pediatric Diabetes	Provides an overview of diabetes in the pediatric population. Epidemiology and etiology, types of diabetes in children and symptom recognition, medication and diet management, complications, new technological devices, and family interventions.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	LEC 0.5 0.5 0.5
NCE272	Certified Medication Assistant	Completion of this course will qualify the student to sit for the certification examination to administer prescribed medications within defined state laws (Legislation A.R.S.32-1650.01).	Prerequisites: Students will need to have been a Certified Nursing Assistant (CNA) or a Licensed Nursing Assistant (LNA) for a minimum of six months, or completed the CNA or LNA course within the past year, or completed semester I of the Practical Nurse (PN) program, or completed the first block of the Registered Nurse (RN) program, or permission of the Director or Program Director as students who have completed components of nursing programs may qualify for a CMA waiver.	L+L 4.0 6.0 8.0

NCE273	Rehabilitation Technician	<p>The rehabilitation technician (RT) performs patient related care tasks, assists patients with activities of daily living and provides direct patient care under supervision of the licensed nurse and or licensed therapist. Obtains and records patient vital signs. Monitors and records daily intake and output. Obtains specimens, including non-invasive body fluids and blood specimens. Performs electrocardiogram (ECG) electrode placement, running ECG strips, and blood glucose monitoring. Assists physician, licensed nurse, or licensed therapist with diagnostic tests, clinical procedures, and other tasks as requested. Communicates patient needs and observed/reported changes in patient condition to supervising licensed nurse, physician or licensed therapist. Documents all interactions as directed by licensed nurse, physician, or licensed therapist. Assists licensed therapist in performing therapeutic procedures. Carries out assigned rehab tech duties such as cleaning treatment areas, completing equipment maintenance and transporting patients.</p>	Prerequisites: Valid certification or license as a nurse assistant (CNA or LNA) OR completion of a nurse assistant program within the past twelve (12) months OR permission of the Nursing Director.	L+L 2.0 2.5 3.0
NCE274	Industry Telemetry Nursing	<p>Overview of cardiac anatomy, physiology, and the conduction system. Demonstration of a cardiac assessment, review of normal and abnormal lab values, arrhythmias, and cardiac abnormalities seen on an electrocardiogram (ECG). Introduction to medications specific to the cardiac patient. Overview of cardiac procedures, nursing interventions, and emergency treatment.</p>	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.	L+L 4.0 4.5 5.0
NCE275	Registered Nurse Update	Update of current general principles of nursing care, procedures and medication.	Prerequisites: Current Registered Nurse License.	LEC 10.0 6.0 6.0 LAB 0.0 12.0 12.0

NCE276	Clinical Teaching in Nursing: An Overview	Applies Nurse of the Future Competencies and educational Constructivism learning theory to develop a foundation for nursing faculty. Designed to assist instructor to consistently plan, guide, and evaluate learning activities for nursing students in clinical environments.	Prerequisites: Current Registered Nurse License.	LEC 1.0 1.0 1.0
NCE277	Clinical Teaching in Nursing: A Practicum Experience	Overview of the process, concepts and skills related to supervising nursing students in the clinical area with application of concepts learned. A mentored clinical experience to guide and facilitate the student in the development of skills of clinical instruction.	Prerequisites: Current Arizona Registered Nurse License, BSN required, but MSN preferred as per our accrediting and approval bodies. All health and safety requirements per the current Maricopa Nursing Clinical Instructor Handbook must be met prior to admission into this course.	LEC 1.5 0.5 0.5 LAB 0.0 45.0 3.0
NCE278	Critical Care Nursing	Foundations in critical care for nurses who are interested in entering the critical care environment or nurses who seek to increase their expertise in critical care. Includes basic anatomy, physiology, and pharmacology. Disease management for the following systems: cardiac, respiratory, neuroscience, gastrointestinal, renal, endocrine and hematology, hemodynamics and ventilator management. The lab includes case studies, simulation, and lab practice.	Prerequisites: Current license as a Registered Nurse or recent graduate of an accredited nursing program or permission of Instructor and/or employer. Licensed Practical Nurses will be allowed to take the course by request of their employer and/or with permission of the Instructor.	L+L 4.0 4.5 5.0
NCE282AA	Volunteerism for Nursing: A Service Learning Experience	Service-learning field experience within human service organization/agency.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
NCE290	Concepts of Aging	Examine several concepts of aging: physiological, cognitive, spirituality, health promotion, and pharmacology of the older adult. Focus will be placed on caring for the aging patient and their family.	Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or registered as student nurse or permission of Instructor.	LEC 1.0 1.0 1.0

NCE291	Nursing Skills and Patient Care in Simulation	Review of basic skills. Remediation, guided learning, and simulation performance.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or registered as student nurse or permission of Instructor.	LAB 1.0 45.0 3.0
NCE292	Simulation for Patient Care Experiences	Review and practice of nursing skills. Remediation, guided learning, and simulation performance.	Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or registered as student nurse or permission of Instructor.	LAB 2.0 90.0 6.0
NCE293	Team Management of Deteriorating Patients in Simulation	Development of skills needed to effectively identify, assess, monitor, and respond to patients who are either deteriorating or at risk of deteriorating related to injury or disease process.	Prerequisites: Current licensure as a health professional or registered as a student in a health professional program of study, or permission of Instructor.	LAB 2.0 90.0 6.0
NCE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
NCE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

NCE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
NET127	How Computers Work	Functional description of hardware component operation of the IBM and compatible microcomputers. Electronic and electromechanical components operation during bootup process and operating system utilization, RAM, RAM caching and the microprocessor, and data storage. Data storage description includes floppy disks, hard disk, CD-ROM, other disk type drives, and tape backup	Prerequisites: None.	LEC 1.0 1.0 1.0
NET181	Visual BASIC for Technology	Introductory coverage of programming techniques in Visual BASIC. Flowcharting, pseudocoding, coding, testing, and documenting programs in accordance with specifications	Prerequisites: None.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
NET183AA	Operating Systems	Designed to develop an understanding of operating systems and their interaction with hardware, software, networking, security, troubleshooting, IP addressing, user interfaces and operating system installation. The course is intended to help prepare students for entry-level industry certifications.	Prerequisites: None. BPC101AA recommended for those students unfamiliar with basic computer operations.	L+L 2.0 3.0 3.0

NET220	Health Information Networking	Designed to equip students with knowledge and skills applicable to entry-level careers in healthcare networking. Using Cisco hardware and software, aims to develop an in-depth understanding of the critical principles and practices required in this specialized field.	Prerequisites: A grade of C or better in CNT170AA or Certified Cisco Networking Associate (CCNA) certification or permission of Instructor.	L+L 2.0 4.0 4.0
NET271	Microcomputer Maintenance I: A+ Prep	Technical aspects of the microcomputer, including system setup (hardware and software) and basic maintenance and troubleshooting. Emphasis on basic troubleshooting, use of tools, hardware components and hardware/software interfacing as stand alone systems and in a networked environment.	Prerequisites: A grade of C or better in NET183AA, or CIS121AB, or CIS126AA, or permission of Instructor.	L+L 3.0 4.0 4.0
NET275	CompTIA Exam Prep	Focuses on reviewing key concepts, practicing skills and preparing to successfully demonstrate existing knowledge on CompTIA certification exams. The course is designed to provide an overview of exam topics, study and test-taking strategies. It also will include structured study time, group discussions, and the use of practice exams to assess test readiness.	Prerequisites: A grade of C or better in BPC170 or BPC270 or NET271 or permission of the Instructor.	L+L 2.0 3.0 3.0
NLT100	Nail Technology I	Introduction to basic nail services, general sciences, safety, and infection control practices in the nail care industry.	Prerequisites: None.	200
NLT105	Nail Technology II	Apply advanced techniques and continue to build on previous concepts learned in nail services, general sciences, safety, and infection control in the nail industry.	Prerequisites: None.	200

NLT110	Nail Technology III	This course is designed to prepare Nail Technology students for the written and practical examinations for Arizona State Board of Cosmetology licensure. Students will master and apply previous concepts learned in nail services, general sciences, and business skills in the nail care industry.	Prerequisites: None.	200
NMS120	Media in Cyberspace	Using on-line material, investigates how the new information technologies affect the more traditional media. The effect on consumers and society.	Prerequisites: None.	LEC 3.0 3.0 3.0
NMS160	Sports Media Careers	Introduction to the professions, organizations, and media occupations within sports management. Examines professional and not-for-profit organizations, career opportunities in collegiate and community sports organizations, and career opportunities in the traditional and non-traditional media arenas. Includes resume writing, cover letters, career choices, interviews, and job searching strategies for sports management organizations.	Prerequisites: None.	LEC 3.0 3.0 3.0
NMS215	Electronic Newsroom	Creating, writing, designing, managing, promoting, and publishing the online student publication through team effort. Emphasis on style, consistency, and news/information judgment combined with community involvement.	Prerequisites: A grade of C or better in JRN215 or NMS120 or JRN203 or permission of Instructor.	L+L 3.0 5.0 5.0
NUC100	Introduction to Nuclear Medicine Technology	Role of the nuclear medicine technologist job duties, responsibilities, working conditions and work environments. Certification and licensing requirements for the nuclear medicine technologist, shadowing experience specific to the nuclear medicine department.	Prerequisites: None.	LEC 1.0 1.0 1.0
NUC101	Essentials of Nuclear Medicine Technology	Introduction to the essential information for the Nuclear Medicine Technology program.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 1.0 1.0 1.0

NUC103	Nuclear Medicine Image Evaluation I	Faculty-led case presentation with reinforcement of processing parameters.	Prerequisites: Admission to Nuclear Medicine Technology program.	L+L 1.0 3.0 3.0
NUC108	Structured Diagnostic Medical Imaging Skills Enhancement	Structured diagnostic imaging cognitive learning and imaging study skills to help students achieve success in their respective imaging courses. Diagnostic medical imaging learning process and critical thinking application skills emphasized in coordination with the level of matriculation.	Prerequisites: None. Corequisites: Enrolled in Diagnostic Medical Imaging Program (Medical Radiography Nuclear Medicine Technology and Diagnostic Medical Ultrasound) or permission of Program Director.	LEC 1.0 1.0 1.0
NUC110	Introduction to Radiation Physics and Biology for Nuclear Medicine	Atomic structure, types of radiation, radiation biology, and radiation protection.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC112	Nuclear Medicine Quality Control Laboratory	Introduction to the nuclear medicine laboratory rules, equipment operation, and quality control (QC).	Prerequisites: Admission to Nuclear Medicine Technology program.	LAB 1.0 3.0 3.0
NUC113	Nuclear Medicine Clinical Applications Laboratory	Establishing competencies by demonstration of nuclear medicine imaging and non-imaging procedures.	Prerequisites: Admission to Nuclear Medicine Technology program.	LAB 1.0 3.0 3.0
NUC114	Nuclear Medicine Instrumentation	Principles of safe operation for nuclear medicine imaging and non-imaging equipment, including quality control.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC116	Nuclear Medicine Procedures I	Skeletal, respiratory, gastrointestinal (GI) anatomy, physiology, pathology, and related clinical procedures and techniques.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC120	Radiopharmaceutical/Pharmaceutical Administration for the Nuclear Medicine Technologist	Techniques for the administration of radiopharmaceuticals and pharmaceuticals used by the nuclear medicine technologist	Admission to Nuclear Medicine Technology program.	L+L 1.5 1.5 1.5
NUC122	Nuclear Medicine Imaging I Lab	Protocols for opening/operating in a nuclear medicine department. Quality control, radiation safety, performance of bone scans, lung scans, and genitourinary procedures	Admission to Nuclear Medicine Technology program.	LAB 1.0 3.0 3.0



NUC124AA	Nuclear Medicine Theory I: Part A	Non-imaging instrumentation to include gas-filled detector systems, scintillation detection systems, statistics, nuclear counting statistics, and laboratory equipment. Imaging instrumentation to include planar scintillation cameras, multicrystal scintillation cameras, solid-state detector systems, single photon emission computed tomography (SPECT)	Admission to Nuclear Medicine Technology program.	LEC 1.5 1.5 1.5
NUC124AB	Nuclear Medicine Theory I: Part B	Imaging instrumentation to include quality control of imaging systems and maintenance of image archiving systems. Computers in instrumentation, types of computers, number systems, general structure of computer hardware, software, communications, data management, internet, nuclear medicine computer systems and quality control of these systems	Admission to Nuclear Medicine Technology program.	LEC 1.5 1.5 1.5
NUC126	Nuclear Medicine Procedures II	Endocrine and genitourinary anatomy, physiology, pathology, and clinical procedures and techniques.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC130	Professionalism and Patient Care	Communication and interaction skills, patient assessment, procedures involving transport, medical records, infection control, emergency, safety and venous access.	Prerequisites: Admission to Nuclear Medicine Technology program.	LAB 1.0 3.0 3.0
NUC170AA	Nuclear Medicine Cardiac Imaging I	Cardiovascular anatomy, physiology and pathology as it relates to cardiac system imaging. Cardiac stress and rest testing, myocardial perfusion and viability, equilibrium radionuclide angiograph (ERNA or MUGA or RVG). First pass angiography, infarct imaging, major vessels flow studies and detection of deep vein thrombosis	Admission to Nuclear Medicine Technology program.	LEC 1.5 1.5 1.5

NUC170AB	Nuclear Medicine Cardiac Imaging II	Cardiovascular imaging instrumentation, procedures, and processing. Radiopharmaceuticals and interventional drugs used in cardiovascular imaging. Non-pharmacologic stress testing. Patient care for the cardiac patient including procedures and pharmaceuticals	Admission to Nuclear Medicine Technology program.	LEC 1.5 1.5 1.5
NUC212	Clinical Practicum I	Orientation to facility policies and departmental organization. Under direct supervision, clinical application of current nuclear medicine practice of patient care and clinical experiences with an emphasis on quality control (QC) procedures.	Prerequisites: Admission to Nuclear Medicine Technology program.	LAB 1.5 9.0 0.0
NUC214	Fundamentals of Nuclear Medicine II	Principles and applications of statistics as they relate to Nuclear Medicine. Configuration, function, and application of computers and networks in nuclear medicine.	Admission to Nuclear Medicine Technology program.	LEC 1.5 1.5 1.5
NUC220	Sectional Anatomy for Nuclear Medicine	Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, thorax, abdomen/pelvic cavity and extremities.	Prerequisites: Admission to the Nuclear Medicine Technology Program or permission of Program Director.	LEC 3.0 3.0 3.0
NUC222	Clinical Practicum II	Supervised clinical application of current nuclear medicine practice reinforcing didactic and laboratory concepts. Demonstrate developing competency in introductory nuclear medicine procedures.	Prerequisites: Admission to Nuclear Medicine Technology program.	LAB 3.0 15.0 0.0
NUC223	Nuclear Medicine Image Evaluation II	Student led/instructor coached evaluation of images related to clinical situations and procedures. Demonstration of technical skills.	Prerequisites: Admission to Nuclear Medicine Technology program.	L+L 1.0 3.0 3.0

NUC224	Fundamentals of Nuclear Medicine III	Policy and regulations of delivery systems health policy and ethics regarding the access of health care. Medical informatics implementation of clinical system data entry, patient data, administration, and medical quality assurance mandatory patient centered documentation for federal, state, regulatory, and credentialing agencies professional medical ethics, legal issues and patient rights.	Admission to Nuclear Medicine Technology program.	LEC 1.5 1.5 1.5
NUC232	Clinical Practicum III	Under the supervision of licensed technologists, enhance skills and knowledge of current nuclear medicine practice with a focus on broadening procedure competencies.	Prerequisites: Admission to Nuclear Medicine Technology program.	LAB 3.0 15.0 0.0
NUC233	Nuclear Medicine Image Evaluation III	Advanced student-led serial evaluation of images related to clinical situations and procedures. Demonstration of technical skills.	Prerequisites: Admission to Nuclear Medicine Technology program.	L+L 1.0 3.0 3.0
NUC234	Nuclear Medicine Department Administration	Practical methods of leadership, ethics, advocacy, department management, continuous quality improvement, coding and reimbursement, and accreditation.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC236	Nuclear Medicine Procedures III	Central nervous system (CNS), tumor, hematopoietic and infection clinical procedures and techniques to demonstrate anatomy, physiology, and pathology.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC240	Clinical Pathology for Diagnostic Imaging	Causes of disease etiology and impact on the human body. Common physiologic effects of disease on body systems. Correlations of disease, physical findings, clinical laboratory values and diagnostic imaging. Role of Diagnostic Medical Imaging (DMI) modalities in the diagnosis and treatment of selected disease processes as part of the health care team. Cultural implications in the prevention and treatment of disease.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0

NUC242	Clinical Practicum IV	Independently function under limited supervision of licensed technologists. Advancement of skills to include all required competencies. Practice diverse and appropriate methods of performing procedures.	Prerequisites: Admission to Nuclear Medicine Technology program.	LAB 3.0 15.0 0.0
NUC243	Nuclear Medicine Image Evaluation IV	Evaluation of images related to clinical situations and procedures. Demonstration of technical skills. Peer-reviewed literature.	Prerequisites: Admission to Nuclear Medicine Technology program.	L+L 1.0 3.0 3.0
NUC244	Nuclear Medicine Radiopharmacy	Radiopharmacy and adjunctive pharmaceutical preparation, calculation, administration, and quality control.	Prerequisites: Admission to Nuclear Medicine Technology program.	L+L 3.0 4.0 4.0
NUC246	Nuclear Medicine Procedures IV	Radiopharmaceutical therapy and theranostics clinical procedures and techniques.	Prerequisites: Admission to Nuclear Medicine Technology program or permission of Program Director.	LEC 3.0 3.0 3.0
NUC250	Fundamentals of Computed Tomography and Elements of Magnetic Resonance Imaging	Introduction to principles and operation of computed tomography (CT) scanner and magnetic resonance imaging (MRI).	Prerequisites: Admission to Nuclear Medicine Technology program or permission of the Program Director.	LEC 3.0 3.0 3.0
NUC251	Computed Tomography and Hybrid Imaging Case Analysis	Anatomy, physiology, pathology, and techniques related to the performance of clinical computed tomography (CT) and hybrid imaging.	Prerequisites: Admission to Nuclear Medicine Technology program or permission of Program Director.	LEC 3.0 3.0 3.0
NUC252	Clinical Practicum V	Orientation to facility policies and procedures and departmental organization. Reinforcement and broadening of knowledge base related to patient care and the roles and responsibilities of the nuclear medicine technologist at the advanced level. Focus on progression to independent level of function in the areas of patient care, radiation protection, instrumentation imaging, non-imaging and computers, radiopharmacy, diagnostic and therapeutic procedures. Ethical and professional behaviors, Health Insurance Portability and Accountability Act (HIPAA) requirements	Admission to Nuclear Medicine Technology program.	LAB 3.0 15.0 0.0

NUC253	Nuclear Medicine Image Evaluation V	Emphasis on positron emission tomography (PET) therapy imaging and other studies new to the nuclear medicine imaging field. Evaluation of images related to clinical situations and procedures including patient history, patient preparation, name and energy of radiopharmaceutical, method of localization, dosimetry, and method of clearance. Normal and abnormal distribution. Need for additional views and/or procedures. Technical limitations, protocol and equipment parameters and procedure results. Examination of professional journal articles.	Admission to Nuclear Medicine Technology program.	LAB 1.0 3.0 3.0
NUC259	Fundamentals of Research in Nuclear Medicine	Fundamental components to nuclear medicine research.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC260	Research Methods and Design	Exploration of knowledge and effective analysis of resources to promote best practice in imaging professions. Introduction to research design, statistical reasoning, and interpretation of the medical literature. Provide a basis for understanding and interpreting the literature for use in evidence-based practice.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC261	Emerging Technologies	Exploration of new and emerging technologies that will become tomorrow's standard of practice. Introduction to these new ideologies. Development and presentation of research findings.	Admission to Nuclear Medicine Technology program.	LEC 2.0 2.0 2.0
NUC262	Capstone Practicum	Culminating course to integrate the educational process to facilitate role transition from student to graduate nuclear medicine technologist.	Prerequisites: Admission to Nuclear Medicine Technology program or permission of the Program Director.	LAB 1.5 9.0 0.0

NUC263	Nuclear Medicine Research Presentation and Publication	Presentation of research project at local, regional, or national meeting or submission of research project to scientific journal for publication. Critical evaluation of research projects.	Prerequisites: A grade of C or better in NUC259 and NUC260.	LEC 3.0 3.0 3.0
NUC270	Nuclear Medicine Scientific Method	Scientific research in the field of nuclear medicine. Abstract writing to include research study results, objectives, methods, observational and analytical techniques, and conclusion	Admission to Nuclear Medicine Technology program.	LEC 1.0 1.0 1.0
NUC272	Cardiac Practicum	Comprehensive, advanced-level practical experience at a designated cardiac clinical site.	Prerequisites: Admission to Nuclear Medicine Technology program or certified by the American Registry of Radiologic Technologists (ARRT) in Nuclear Medicine [R.T. (N)] or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine.	LAB 1.5 9.0 0.0
NUC276	Nuclear Cardiology	Cardiovascular anatomy, physiology, and pathophysiology as it relates to cardiac imaging including cardiac blood flow, electrophysiology, and function. Pharmacologic and exertional stress testing methods used in conjunction with imaging. Cardiac imaging instrumentation, acquisition and processing procedures, artifacts, and quality control.	Prerequisites: Admission to Nuclear Medicine Technology program or certified by ARRT [R.T. (N)] or the Nuclear Medicine Technology Certification Board (NMTCB) in nuclear medicine.	L+L 3.0 4.0 4.0
NUC280	Nuclear Medicine PET Physics and Instrumentation	Principles of safe operation for positron emission tomography (PET) systems and required quality control.	Prerequisites: Admission to Nuclear Medicine Technology program or certified by the American Registry of Radiologic Technologists (ARRT) [R.T. (N)] or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine.	LEC 3.0 3.0 3.0
NUC283	PET/CT Practicum	Comprehensive, advanced-level practical experience at a Positron Emission Tomography/Computed Tomography (PET/CT) clinical site.	Prerequisites: Admission to Nuclear Medicine Technology program or permission of the Program Director.	LAB 1.5 9.0 0.0

NUC290	Nuclear Medicine Seminar	Review of content areas addressed on the American Registry of Radiologic Technologists (ARRT), Nuclear Medicine Technology Certification Board (NMTCB), and Arizona state licensure examinations. Study and test-taking strategies.	Prerequisites: Admission to Nuclear Medicine Technology program.	LEC 3.0 3.0 3.0
NUC292	Radiopharmacy Practicum	Comprehensive, high level practical experience at a Radiopharmacy clinical site. Cooperative work with direct and indirect supervisory personnel in a Radiopharmacy setting. Emphasis on technical components of Radiopharmacy procedures and radiation safety.	Admission to Nuclear Medicine Technology program.	LAB 1.0 3.0 0.0
NUR101	Student Success in Nursing	Individual self-awareness and self management strategies for success with nursing study, clinical reasoning and testing success. Emphasis on the development of prioritizing and delegation skills for the nursing student.	Prerequisites: Permission of Instructor.	LEC 1.0 1.0 1.0
NUR102	Nursing Process Transition	Transitions paramedics to scope and practice of nursing. Focuses on nursing concepts and theories to meet basic human needs across the lifespan throughout the wellness/illness continuum. Theoretical concepts focus on clients of all ages with selected physiological and psychological alterations. Emphasis on expanding the paramedic's skills and experience to transition to the role of the nurse utilizing nursing process and critical thinking in acute care and community settings.	Prerequisites: Arizona or National Paramedic Registry Certificate, and application and admission to Maricopa Nursing advanced placement. One year current healthcare work experience required or permission of Nursing Department Chairperson. Corequisites: NUR103.	LEC 4.0 4.0 4.0

NUR103	Nursing Science Transition	Application of nursing concepts and theories of health promotion to nursing care to meet basic human needs. Provides opportunity for the paramedic to develop clinical competency in selected nursing skills and care of clients across the lifespan experiencing altered physiologic functioning. Includes clinical experience with individuals, families, and small groups of clients in acute, long-term, and community settings to develop care plans, teaching plans, and discharge plans.	Prerequisites: Arizona or National Paramedic Registry Certificate, and application and admission to Maricopa Nursing with advanced placement. Minimum of one year current healthcare work experience required or permission of Nursing Department Chairperson. Corequisites: NUR102.	LAB 4.0 12.0 12.0
NUR104AA	Structured Nursing Review	Structured nursing tutorial assistance and nursing study skills to help students achieve success in their respective block of nursing courses. Nursing process and critical thinking application skills emphasized.	Prerequisites: None. Corequisites: Enrollment in the Nursing program or permission of Department Chair.	LEC 0.5 0.5 0.5
NUR104AB	Structured Nursing Review	Structured nursing tutorial assistance and nursing study skills to help students achieve success in their respective block of nursing courses. Nursing process and critical thinking application skills emphasized.	Prerequisites: None. Corequisites: Concurrent enrollment in the Nursing program or permission of Department Chair.	LEC 1.0 1.0 1.0
NUR106	Nursing Theory and Science Transition (Paramedic Bridge)	Introduction and utilization of Nurse of the Future competencies to develop knowledge, skills, and attitudes to provide safe, quality patient care across the wellness-illness continuum in selected medical-surgical and mental health patients. Basic care concepts and nursing process are utilized to meet the needs of adult and older adult patients.	Prerequisites: (Arizona or National Paramedic Registry Certificate), acceptance into the Maricopa Nursing advanced placement, NUR187, and (one year current work experience utilizing Paramedic scope of practice or permission of Nursing Department Chairperson.).	LEC 9.0 5.5 5.5 LAB 0.0 157.5 10.5



NUR150	Practical Nurse Bridge Course	<p>Designed to bridge previously gained healthcare knowledge, skills, and abilities of the military Veteran student and/or Licensed Practical Nurse (LPN) seeking to refresh knowledge in the role of the practical nurse. Course includes didactic, laboratory, and clinical experiences for practical nursing including concepts and theories related to care of geriatric, adult, pediatric, and childbearing clients. Areas of didactic and clinical focus include: role of the practical nurse collaborating with other members of the healthcare team; concepts of health promotion and disease/illness prevention; therapeutic communication techniques; nutritional concepts; medication administration to include pharmacokinetics and pharmacodynamics of medications, nursing considerations in medication administration, and dosage calculation; documentation and concepts related to information technology.</p> <p>Emphasis in clinical practicum is on nursing care of pediatric and child-bearing families, and older adult residents of long term care facilities with selected alterations in health; concepts of delegation, prioritization and management of care for the practical nurse is integrated.</p>	<p>Prerequisites: A military Veteran with a health care designation (medic/corpsman) or a licensed practical nurse (LPN) who requires a refresher program. Approval of the Nursing Chair or designee and application packet completion is required.</p>	<p>LEC 12.0 9.0 9.0 LAB 0.0 180.0 12.0</p>
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NUR151	Nursing Theory and Science I	Introduction to fundamentals of nursing theory and practice utilizing critical thinking based on the nursing process and principles of evidence based practice. Focus on meeting basic human needs within the wellness/illness continuum. Theoretical concepts related to holistic care of well, geriatric, and adult clients. Provides safe nursing care to clients with selected alterations in health. Introduction to professional nursing practice. Applies concepts of health promotion, disease/illness prevention. Provides care based upon integration of pathophysiology, nutrition, communication and physical, biological, and psycho-social sciences. Uses information technology in performing and evaluating client care	Admission into the Nursing Program.	LEC 10.0 5.0 5.0 LAB 0.0 15.0 15.0
NUR152	Nursing Theory and Science I	Introduction of Nurse of the Future competencies as a foundational framework for development of the professional nurse. Basic care concepts and the nursing process are utilized to meet the needs of adult and older adult patients.	Prerequisites: Admission into the Nursing Program.	LEC 9.0 4.0 4.0 LAB 0.0 225.0 15.0
NUR156	Nurse Assisting	Role of the nursing assistant for clients across the wellness/illness continuum within the nurse assisting scope of practice. Introduction to problem solving process specific to meeting the basic and holistic needs of clients. Professional communication skills essential for the nursing assistant. Nursing interventions to ensure the needs and safety of the client. Specific types of diseases, conditions and alterations in behavior of the client. Principles of nutrition and fluid balance. Special needs of the elder client in the acute and long-term care settings. Basic emergency care skills and procedures.	[HCC130 or (HCC130AA, HCC130AB, HCC130AC, HCC130AD, HCC130AE, and HCC130AF)] and HCC145AA. College Placement Exam indicating eligibility for CRE101, or HESI-A2 exam English Composite score of 75% or higher. Corequisites: NUR157.	LEC 2.0 2.0 2.0

NUR157	Nurse Assisting Lab	<p>Demonstration of problem solving, professional behavior and therapeutic communication skills. Demonstration of caring behaviors and ensuring environmental safety for the client. Provides opportunity for the development of clinical competency in the performance of selected nursing assisting skills and procedures through participation in the care of clients.</p>	<p>Prerequisites: Completed MCCD Background Clearance check, Health and Safety Documentation, and Health Care Provider signature form. Corequisites: NUR156.</p>	LAB 2.0 6.0 6.0
NUR158	Nurse Assisting	<p>Introduction to the role of the nursing assistant for clients across the wellness/illness continuum within the nurse assisting scope of practice. Includes basic problem solving processes specific to meeting the basic and holistic needs of clients, therapeutic communication skills essential for the nursing assistant, interventions to ensure the needs and safety of the client, specific types of diseases, conditions and alterations in behavior of the client, and principles of nutrition and fluid balance. Focus is on special needs of the elder client in the acute and long-term care settings, and basic emergency care skills and procedures. Provides opportunity for the development of clinical competency in the performance of selected nurse assisting skills and procedures through participation in the care of clients.</p>	<p>Prerequisites: (A grade of C or better in RDG100 or RDG100LL or higher RDG reading course, or eligibility for CRE101 as indicated by appropriate reading placement test score, or HESI-A2 exam English Composite score of 75% or higher) AND (a grade of C or better in MAT082 or eligibility for MAT090 or higher as indicated by appropriate math placement test score, or HESI-A2 exam Math score of 75% or higher). Must provide current Level One DPS Fingerprint Clearance Card, meet pass status on MCCD Background Check, and submit required health and safety documentation.</p>	LEC 6.0 4.0 4.0 LAB 0.0 90.0 6.0

NUR160PN	Practical Nursing Theory and Science I	Core values of the practical nursing program, nursing history, standards, and scope of practice of the practical nurse. Safe nursing care of clients with selected alterations in health; fundamental concepts of health promotion, disease/illness prevention. Nursing care based upon integration of pathophysiology, nutrition, communication and physical, biological, and psycho-social sciences. Uses information technology in performing and documenting client care.	Prerequisites: Admission into the Fast Track Practical Nursing Program.	LEC 11.0 6.0 6.0 LAB 0.0 225.0 15.0
NUR171	Nursing Theory and Science II	Application of nursing theory and practice utilizing critical thinking based on the nursing process and evidence based practice. Holistic nursing concepts of health promotion, disease/illness prevention, and health restoration for adult and geriatric clients. Role development as the professional nurse member of the health care team. Participation in client teaching and discharge planning. Application of previous knowledge of physical, biologic, psycho-social sciences, and the cultural and spiritual aspects of nursing care. Application of nursing concepts in the development of plan of care to include pathophysiology, nutrition, pharmacology, and skills in communication. Uses information technology in planning, documenting, and evaluating client care	Prerequisites: A grade of C or better in NUR151 or permission of Nursing Department Chairperson.	LEC 8.0 4.0 4.0 LAB 0.0 12.0 12.0
NUR172	Nursing Theory and Science II	Utilization of Nurse of the Future competencies to develop knowledge, skills, and attitudes to provide safe, quality patient care across the wellness-illness continuum in selected medical-surgical and mental health patients.	Prerequisites: A grade of C or better in (BIO202 and NUR152) or permission of Nursing Department Chair.	LEC 9.0 5.5 5.5 LAB 0.0 157.5 10.5

NUR180PN	Practical Nursing Theory and Science II	Holistic practical nursing concepts and theories related to care of childbearing, pediatric, adult, and geriatric clients. Role of the practical nurse collaborating with other members of the healthcare team. Concepts of health promotion and disease/illness prevention. Nursing care based upon integration of pathophysiology, nutrition, communication and physical, biological and psycho-social sciences. Information technology in performing and documenting client care. Emphasis on nursing care related to pediatric, child-bearing families, and adult clients with selected alterations in health; concepts of delegation, prioritization and management of care for the practical nurse based on the core values of the nursing program.	Prerequisites: A grade of C or better in NUR160PN.	LEC 11.0 6.0 6.0 LAB 0.0 225.0 15.0
NUR187	Pharmacology and Medication Administration	Overview of selected drug classifications and categories. Emphasis on principles of drug metabolism and effects, interactions and adverse reactions, medication administration, and nursing implications for safe practice with a focus on adult and older adult patients. Requires application of previous knowledge of physical, biological, and social sciences.	Prerequisites: Permission of Nursing Department/Division Chair.	LEC 1.5 1.5 1.5
NUR191	Practical Nursing Transition	Overview of the role of the practical nurse in the care of patients. Includes nursing standards and scope of practice of the practical nurse. Emphasis on nursing care related to pediatric and care of the well childbearing patient and childbearing family. Focus on the role of practical nurse in providing care through interventions consistent with established nursing care plans.	Prerequisites: A grade of C or better in NUR171, or NUR172, or permission of Nursing Department Chair.	L+L 3.0 75.0 5.0

NUR251	Nursing Theory and Science III	Application of critical thinking strategies related to holistic care of the newborn, pediatric, and childbearing clients. Integration of concepts related to holistic care of adults and geriatric clients with selected acute and chronic alterations in health. Integration of professional nursing standards in role development. Utilization of previous knowledge of physical, biologic, psycho-social sciences, and the cultural, spiritual aspects of nursing care. Integration of concepts of nutrition, pharmacology, communication, health promotion, and pathophysiology into nursing care.	Prerequisites: A grade of C or better in (BIO202, BIO205 and NUR171) or permission of Nursing Department Chairperson.	LEC 8.0 4.0 4.0 LAB 0.0 12.0 12.0
NUR252	Nursing Theory and Science III	Application of critical thinking strategies related to holistic care of the newborn and childbearing patients. Integration of concepts related to holistic care of adults and older adult patients with selected acute and chronic alterations in health. Integration of professional nursing standards in role development. Utilization of previous knowledge of physical, biologic, psycho-social sciences, and the cultural, spiritual aspects of nursing care. Integration of concepts of nutrition, pharmacology, communication, health promotion, and pathophysiology into nursing care.	Prerequisites: A grade of C or better in (CRE101 and NUR172 and PSY101) or permission of Nursing Department Chair.	LEC 9.0 5.5 5.5 LAB 0.0 157.5 10.5

NUR271	Nursing Theory and Science IV	Integration of critical thinking strategies for complex holistic needs of high-risk clients with multi- system health alterations. Application of strategies related to holistic care of the client with psychiatric/ mental health disorders. Introduction to community based care. Assimilation of professional role into practice. Evaluation of care based on the knowledge of physical, biologic, psycho-social sciences, and the cultural and spiritual beliefs of clients. Development of nurse leadership and management roles. Integration of concepts of nutrition, pharmacology, communication, health promotion, and pathophysiology into nursing care	Prerequisites: A grade of C or better in NUR251 or permission of Nursing Department Chairperson.	LEC 7.0 4.0 4.0 LAB 0.0 9.0 9.0
NUR283	Nursing Theory and Science IV	Applies Nurse of the Future competencies to practice and manage care for the child/family unit and adults requiring complex care throughout the wellness/illness continuum, and prepare for transition from student to professional nurse.	Prerequisites: A grade of C or better in (BIO205 and NUR252) or permission of Nursing Department Chair.	LEC 9.0 5.5 5.5 LAB 0.0 157.5 10.5
NUR291	Nursing Clinical Capstone	Synthesis of the nursing process to facilitate role transition from student to graduate nurse within a preceptorship experience. Development of nurse leadership and management roles.	Prerequisites: A grade of C or better in NUR271 or permission of Nursing Department Chairperson.	LAB 2.0 6.0 6.0
NUR292	Overview of Current Nursing Principles and Practice across the Lifespan	Update of current principles and practice guidelines for returning nurses in pediatric, obstetrical and geriatric clients. Overview of nursing concepts, therapeutic interventions, and evidence-based practice for clients across the lifespan.	Prerequisites: Permission of Instructor.	LEC 2.0 2.0 2.0

NUR295	Registered Nurse Refresher	Update of current principles of nursing theory and practice for registered nurses. Didactic instruction meets all Arizona State Board of Nursing requirements: nursing process and patient centered care; pharmacology, medication calculation, and medication administration; communication; critical thinking, clinical decision making and evidence-based practice; delegation, management, and leadership; working with interdisciplinary teams; meeting psychological and physiological needs of adult clients with medical-surgical conditions; ethics; documentation including electronic health records; informatics; and quality improvement. Concentrated preceptorship experience under the supervision of a registered nurse with faculty guidance. Individualized teaching and learning opportunities to build confidence, competence and an increased level of independent functioning.	Prerequisites: Permission of Instructor.	LEC 10.0 6.0 6.0 LAB 0.0 180.0 12.0
NUR296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0



NUR296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
NUR296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
NUR296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

NUR298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
NUR298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
NUR298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
NVH245	Navajo Culture and Heritage	Survey of the Navajo people, including their history, culture/aesthetics, education, spirituality, and language	Prerequisites: None.	LEC 3.0 3.0 3.0

OAS090	Touch Keyboarding	Introduction to computer keyboarding skills for personal use. Emphasis on touch keyboarding of alphabetic and punctuation keys only	Prerequisites: None.	LAB 0.5 0.5 0.5
OAS101	Computer Typing I: Keyboarding and Formatting	Keyboard mastery; letters, tables, and reports; office production; and manuscripts	Prerequisites: None.	L+L 3.0 5.0 5.0
OAS101AA	Computer Typing I: Keyboard Mastery	Incorporates correct touch typing principles	Prerequisites: None.	L+L 1.0 1.7 1.7
OAS101AB	Computer Typing I: Letters, Tables and Reports	Letter, table, and report formatting	Prerequisites: A grade of C or better in OAS101AA or permission of Department or Division.	L+L 1.0 1.7 1.7
OAS101AC	Computer Typing I: Production and Manuscript	Simple office projects and manuscripts	Prerequisites: A grade of C or better in OAS101AB or permission of Department or Division.	L+L 1.0 1.7 1.7
OAS102	Computer Typing II: Document Production	Arrangement of letters, memos, manuscripts, and tabulation; speed/accuracy improvement	Prerequisites: A grade of C or better in OAS101 or permission of Department or Division.	L+L 3.0 5.0 5.0
OAS103AA	Computer Typing: Skill Building I	Individual progression on speed/accuracy drills.	Prerequisites: Ability to touch type at 25 words per minute or permission of Department or Division.	L+L 1.0 1.7 1.7
OAS103AB	Computer Typing: Skill Building II	Progression on speed/accuracy drills	Prerequisites: A grade of C or better in OAS103AA or permission of Department or Division.	L+L 1.0 1.7 1.7
OAS103AC	Computer Typing: Skill Building III	Progression on speed/accuracy drills	Prerequisites: A grade of C or better in OAS103AB or permission of Department or Division.	L+L 1.0 1.7 1.7
OAS107	Professional Telephone Techniques	Proper telephone techniques and professional business manners	Prerequisites: None.	LEC 1.0 1.0 1.0
OAS108	Business English	Comprehensive coverage of correct use of English grammar including spelling, punctuation, capitalization, and number style mechanics in a business context	Prerequisites: None.	LEC 3.0 3.0 3.0
OAS111AA	Computer Keyboarding I	Mastery of essential microcomputer keyboarding skills. Emphasis on touch typing of alphabetic and numeric keys and symbols	Prerequisites: None.	L+L 1.0 1.7 1.7

OAS118	10-Key By Touch	Touch system of numeric keys on ten-key pads	Prerequisites: None.	L+L 1.0 1.7 1.7
OAS120	Financial Record Keeping	Computerized application of concepts and procedures of office record keeping; includes finance and personnel records, inventory systems, banking procedures and cash control; decision-making process for solving financial problems	Prerequisites: None.	LEC 3.0 3.0 3.0
OAS125	Introduction to the Professional Office	Expectations of the professional in the electronic office of today. Realistic and practical coverage of roles, responsibilities, and environment	Prerequisites: None.	LEC 3.0 3.0 3.0
OAS181	Medical Office: Vocabulary	Basic medical vocabulary with emphasis on pronunciation, spelling, and definition	Prerequisites: None.	LEC 3.0 3.0 3.0
OAS201	Computer Typing III: Advanced Document Production	Mastery of skills and techniques used in the production of letter, manuscript, and statistical documents; decision making; business/industry standard emphasized	Prerequisites: A grade of C or better in OAS102 or minimum typing speed of 50 wpm or permission of Department or Division.	L+L 3.0 5.0 5.0
OAS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

OCS122	Office Orientation and Essential Skills	Develops a comprehensive understanding of essential workplace skills and reinforces learning with structured hands-on practices. Includes fundamental knowledge of office etiquette, note taking, protocol of electronic mail systems, and preparation of oral and written presentations. Identifies individual career opportunities to include preparing a resume and practicing interview techniques	Prerequisites: None.	LEC 3.0 6.0 5.1
OPH100	Electronic Medical Records	Discover the daily workflow of an ophthalmic technician, and examine how healthcare technology and training on an electronic medical record system is both helpful, and essential, for every practicing technician. This course will allow you to learn how to quickly, and professionally, document your findings on a patient's electronic medical record. You will learn how to efficiently enter in all of the information that you gather from the diagnostic tests that you run, as well as how chart all of your examination findings effectively, on the most cutting edge ophthalmic electronic health system on the market. The knowledge gained from this course will allow you to have a complete understanding on how to operate a comprehensive ophthalmic electronic medical records system, a key component of every modern ophthalmic practice.	Prerequisites: None.	42

OPH101	Introduction to Eye Care	This course will introduce the student to the meaning of ophthalmology and the different members of the ophthalmic eye care team. The student will learn different certification levels and the importance of professional development. Body structure, body function, anatomy and physiology of the eye will be discussed in detail. Proper moving, transferring and safety issues of patients; as well as knowledge about diverse populations, geriatric patients and patients with special needs will be demonstrated and discussed. An introduction to infection control, agency guidelines, and using proper aseptic technique will be discussed and demonstrated.	Prerequisites: OPH100 and current health and safety documents.	54
OPH110	Medical Terminology/Abbreviations and Disease Processes for Ophthalmic Medical Assistant	This course will introduce the student to understanding the signs and symptoms of specific eye diseases, as well as how said disease affects the visual system. Systemic diseases with ocular manifestations will be discussed. The students will discuss and document by writing essays on the causes of specific diseases and the procedures used to diagnose and treat these diseases. The students will begin practicing medical terminology and acceptable abbreviations specific to the field of ophthalmology with an outcome of the ability to spell, define, and use ophthalmic terminology and abbreviations. The student will learn, demonstrate and record vital signs.	Prerequisites: OPH100 and OPH101, or with Program Manager approval, and current health and safety requirements.	42

OPH112	Clinical Theory and Skills	This course will explain the principles of optics and refractive states of the eye. Reading eyeglasses and measuring the patient for the proper eyeglass prescription will be demonstrated. The importance of ophthalmic pharmacology will be discussed and students will learn how the medications are used in the ophthalmology practice. Students will learn how to properly write a prescription for eye medications. Demonstration of proper eye drop instillation will be given. The importance of current microorganisms and infection control will be discussed in detail. The students will begin performing comprehensive medical eye examination. Ocular motility and other adjunctive testing in ophthalmology will be demonstrated.	Prerequisites: OPH110 or with Program Manager approval, and current health and safety requirements.	171
OPH114	Basic Skills and Ocular Assessment	This course will develop and refine the knowledge and skills necessary to assist the ophthalmologist in completion of the findings, assessment, and plan needed in a comprehensive ophthalmic medical evaluation for each patient. Community eye health and the importance of low vision will be discussed. The student ophthalmic assistant will perform and demonstrate comprehensive examinations and be required to pass skill evaluation testing.	Prerequisites: OPH112 or with Program Manager approval, and current health and safety requirements.	181
OPH190	Ophthalmic Assisting Externship	This course will give students hands-on experience with patients, staff, and other ophthalmic professionals while using their skills and techniques they obtain from lecture and lab courses. Students are assigned to an approved partnership site for one hundred and twenty (120) hours of externship. This will prepare the student for employment as an ophthalmic medical assistant.	Prerequisites: OPH114 or with Program Manager approval, and current health and safety requirements. Successful completion of all required program coursework.	120

OSH101	Introduction to Occupational Safety, Health, and Environmental Technology	Overview of occupational safety, health, and environmental regulations and technology. Overview of the regulatory framework related to safety and environmental program management. Career opportunities and their relationship to business management.	Prerequisites: None.	LEC 3.0 3.0 3.0
OSH102	Introduction to Industrial Hygiene	Overview of environmental hazardous materials technology. History of pollution leading to current legislation. Environmental effects of pollution. Overview of the regulatory framework. Career opportunities in handling and management of hazardous substances	Prerequisites: None.	LEC 3.0 3.0 3.0
OSH103	General Industry Workplace Safety	Hazard recognition, reduction and accident prevention in workplace environments. Basic overview of Occupational Safety and Health Administration (OSHA) agency safety laws and record keeping requirements. Chemical and materials handling, ergonomic priorities, electrical safety, machine safety, safety requirements, planning and response to natural/man-made emergencies. Personal protective equipment, safety labels/signage, confined spaces, walking/working surfaces, management and employee responsibilities	Prerequisites: None.	LEC 0.5 0.5 0.5
OSH105	Construction Safety	Occupational Safety and Health Act. Common causes for accidents and fatalities in construction. Abatement techniques for construction specific hazards. Use of personal protection and lifesaving equipment. Specific types of health hazards related to the construction industry. Proper methods for handling hazardous materials	Prerequisites: None.	LEC 2.0 2.0 2.0



OSH105AA	Construction Safety	Occupational Safety and Health Act. Common causes for accidents and fatalities in construction. Abatement techniques for construction specific hazards. Use of personal protection and lifesaving equipment. Specific types of health hazards related to the construction industry. Proper methods for handling hazardous materials.	Prerequisites: None.	LEC 3.0 3.0 3.0
OSH106	Industrial Safety	Safety, health management, and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) act, materials handling, electrical safety, machine safety, first response to fire and medical emergencies, safety signs and color codes, recognition of safety and health hazards accident prevention, management responsibilities, and OSHA 10 certification.	Prerequisites: None.	LEC 2.0 2.0 2.0
OSH106AC	Industrial Safety	Safety, health management and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) act, materials handling, electrical safety, machine safety, emergency preparedness, safety signs and color codes, recognition of safety and health hazards accident prevention, and management's responsibilities.	Prerequisites: None.	LEC 3.0 3.0 3.0
OSH107	Occupational Safety Principles and Practice	Application of safety and health regulations and best practices. Hazard identification and accident investigation techniques. Major construction hazards and controls. Application of fire protection standards.	Prerequisites: A grade of C or better in OSH106AC or permission of Instructor.	LEC 3.0 3.0 3.0

OSH112AA	Workplace Hazard Analysis: OSHA Accident Reduction	Transitioning from Occupational Safety and Health Administration's (OSHA) former "Accident Investigation" protocol into a proactive incident investigation program. Basic accident investigation procedures and accident analysis techniques. Basic skills for conducting an effective accident investigation at occupational workplaces.	Prerequisites: None.	LEC 1.0 1.0 1.0
OSH113	Urban Workplace Response: First Aid/Cardiopulmonary Resuscitation	Workplace employee injury/illness response when medical help is less than 15 minutes away. Cardiopulmonary Resuscitation and first aid for the adult, child and infant patients includes Automated External Defibrillator (AED), rescue breathing, obstructed airway, and other first aid procedures. Designed to train employee responders in basic lifesaving skills and procedures required during emergency situation. Application of verbal first aid solutions. Selection and use of appropriate first aid kits. Follow up with appropriate regulatory/insurance documentation.	Prerequisites: None.	LEC 1.0 1.0 1.0
OSH189	Professional Leadership Development for Occupational Safety and Health	Personal and professional leadership development related to Occupational Health and Safety (OSH) through active participation in peer-to-peer and professional mentoring. Exposure to industry technical meetings, technical tours, seminars, college discipline specific campus club, scholarship awareness, career fairs, and other similar events. Supplemented by readings, and pre-and post-activity discussion and critique. Varied content due to variety of personal and professional development available.	Prerequisites: A grade of C or better in HMT/OSH101 and GTC/MIT/OSH106 and a student member of the American Society of Safety Engineers.	LEC 1.0 1.0 1.0

OSH189AA	Professional Leadership Development for Occupational Safety and Health I	Personal and professional leadership development related to Occupational Safety and Health (OSH) through active participation in professional mentoring. Exposure to industry technical meetings, technical tours, college discipline specific campus club, scholarship awareness, and other similar events. Supplemented by readings, and pre- and post-activity discussion and critique. Varied content due to variety of personal and professional development available.	Prerequisites: A grade of C or better in OSH106AC.	L+L 1.0 2.0 0.0
OSH189AB	Professional Leadership Development for Occupational Safety and Health II	Personal and professional leadership development related to Occupational Safety and Health (OSH) through active participation in peer-to-peer and professional mentoring, scholarship awareness and career readiness. Opportunities to gain leadership experience at industry technical meetings, technical tours, and college discipline specific campus activities. Supplemented by readings, and pre- and post-activity discussion and critique. Varied content due to variety of personal and professional development available.	Prerequisites: A grade of C or better in OSH189AA.	L+L 1.0 2.0 0.0
OSH203	Health and Safety Program Management	Introduction to safety program theory and principles needed to develop, manage, implement and evaluate a safety and health program. Systems safety and applied psychology theories that enhance safety program management. Hazard identification methods and controls, and application of these principles to case studies.	Prerequisites: A grade of C or better in OSH106AC or permission of Instructor.	LEC 3.0 3.0 3.0

OSH204	Health and Safety Program Management II	Current and emerging topics in safety and health program management. Exploration of current topics through emerging regulatory and/or consensus standards organizations. Case study investigation and analysis with applications to safety and health management. Introduction to new and evolving online training courses, seminars, video and documents. Adult leaning and instructional theory.	Prerequisites: A grade of C or better in OSH107 and OSH203, or permission of Instructor.	LEC 3.0 3.0 3.0
OSH206	Risk Management and Loss Control	Statistical and cost analysis, report writing, and injury prevention related to loss control. Prevention programs designed to minimize or eliminate property and personnel loss or injury	Prerequisites: None.	LEC 3.0 3.0 3.0
OSH211	Industrial Safety Management Systems and Performance Indicators	Establishment of a safety management system meeting safety management system standards, concentrating on reactive and proactive approaches for safety department functions. Specific content includes development of safety duties, establishment of performance metrics, investigational accuracy and self-assessment.	Prerequisites: A grade of C or better in OSH203.	LEC 3.0 3.0 3.0
OSH213	Excavation, Trenching and Soil Mechanics	Evaluation and application of state-of-the-art technology protection for trenches and excavations. Analysis of soil mechanics and implement safety controls for trenches and excavations. Training requirements for a competent person required by Occupational Safety and Health Administration (OSHA) standards and other requirements.	Prerequisites: A grade of C or better in OSH105AA or OSH106AC.	LEC 2.0 2.0 2.0

OSH218	Ergonomics	Analysis and evaluation of ergonomics risk factors for occupational tasks. Application of theories, methods, and techniques used in work design and systems. Methodological problems in human information processing, human control functions, human-machine interface, work design and process evaluation.	Prerequisites: A grade of C or better in OSH107 or permission of Instructor.	LEC 3.0 3.0 3.0
OSH220	Safety and Emergency Management	Assessment of emergency management systems for occupational safety program development. Planning and implementation of the four phases of emergency management: mitigation, preparedness, response, and recovery. Analysis of all hazards preparedness and response in emergency situations resulting from natural and technological hazards. Planning and budgeting for resources and staffing.	Prerequisites: A grade of C or better in OSH105AA or OSH106AC.	LEC 3.0 3.0 3.0
OSH224	Emergency Planning for Safety Managers	Design and develop Emergency Operations Plans (EOP) for safety and emergency program managers in the private and public sector. Application of guiding principles to the planning process including hazard analysis, plan format, and emergency exercise development. Building a team of stakeholders from internal and external agency and government emergency organizations. Planning and development of exercise plans as required by local and federal authorities.	Prerequisites: A grade of C or better in OSH220.	LEC 3.0 3.0 3.0
OSH230	Safety and Environmental Response to Hazardous Spills and Waste	Evaluation and demonstration of safety procedures regarding response to hazardous waste treatment sites, storage or hazardous waste facilities, and disposal operations specifically required in the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.120.	Prerequisites: A grade of C or better in OSH105, or OSH105AA, or GTC/MIT/OSH106, or OSH106AC, or equivalent training as determined by the Program Director of the Occupational Safety and Health or Water Resources Technologies programs.	L+L 3.0 3.0 3.0

OSH240	Fire Protection Systems	Building occupant safety requirements including industry standards, regulations, building codes, fire codes and life safety codes. Fundamentals of fire protection system operation, inspection and maintenance. Principles of life safety systems including fire door and walls, smoke control systems, and exit components.	Prerequisites: A grade of C or better in OSH106AC.	LEC 3.0 3.0 3.0
OSH270AA	Occupational Safety and Health Internship	Occupational Safety and Health (OSH) work experience in business, industry or government. Eighty (80) hours of designated work experience.	Prerequisites: A grade of C or better in HMT/OSH101 and OSH106AC or permission of Instructor.	LAB 1.0 6.0 0.0
OSH270AB	Occupational Safety and Health Internship	Occupational Safety and Health (OSH) work experience in business, industry or government. One hundred and sixty (160) hours of designated work experience.	PPrequisites: A grade of C or better in HMT/OSH101 and OSH106AC.	LAB 2.0 12.0 0.0
OSH270AC	Occupational Safety and Health Internship	Occupational Safety and Health (OSH) work experience in business, industry or government. Two hundred and forty (240) hours of designated work experience.	Prerequisites: A grade of C or better in HMT/OSH101 and OSH106AC.	LAB 3.0 18.0 0.0
OSH290AC	Case Study and Research Project	Completion of a selected safety project in policy and procedure development or training program curriculum design in actual or simulated work setting. Combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students	Prerequisites: Permission of Instructor.	L+L 3.0 3.0 3.0

OSH298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
OSH298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
OSH298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

OTA100	Introduction to Occupational Therapy Assistant Profession	History, theory and philosophy of occupational therapy and occupational therapy assistant (OTA) professions. Topics include practice contexts, ethics, and scope of practice. Emphasis on developing professional behavior skills expected of an entry-level occupational therapy assistant.	Prerequisites: None.	LEC 2.0 2.0 2.0
OTA102	Psychosocial Health and Occupation	Analysis of impact of psychosocial health on occupation throughout the lifespan. Focus on occupational therapy (OT) assessments and screening procedures for process skills, social interaction skills, and performance patterns. Theoretical models for group occupational therapy assistant (OTA) interventions and development of therapeutic client relationships.	Prerequisites: Admission to the Occupational Therapy Assistant program, and a grade of C or better in (OTA100 and PSY101). Corequisites: PSY266.	LEC 3.0 3.0 3.0
OTA105	Fieldwork: Psychosocial	Introductory-level clinical fieldwork experience for the occupational therapy assistant (OTA). Emphasis on observational skills and basic interactional skill in a mental health clinical setting with a culturally diverse client population. Focus on developing professional behavior, professional communication, and clinical reasoning in psychosocial context. Opportunities to apply group theory and therapeutic use of self.	Prerequisites: Admission to Occupational Therapy Assistant program. Corequisites: OTA102.	LAB 0.5 3.0 0.0
OTA107	Fundamentals of Occupational Therapy	Discussion of Occupational Therapy Practice Framework (OTPF), analysis of occupational performance and analysis of activities. Role of occupational therapy assistant (OTA) from referral to discharge. OTA interventions, documentation requirements, and terminology. Emphasis placed on therapeutic use of self and development of clinical reasoning skills.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in OTA100.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0



OTA117	Physical Health and Occupations	Impact of physical health on occupation throughout the lifespan. Focus on observing, identifying, measuring, and assessing motor and sensory client factors.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in BIO202.	LEC 3.0 1.0 1.0 LAB 0.0 6.0 6.0
OTA157	Occupational Therapy Assistant in Physical Rehabilitation	Theories and practice models for occupational therapy for clients with physical disabilities. Topics include pathology and therapeutic interventions. Emphasis on clinical reasoning, locating resources, daily treatment planning, task and environmental modifications, activity grading, client education and documentation.	Prerequisites: Admission to the Occupational Therapy Assistant program.	LEC 3.0 1.0 1.0 LAB 0.0 6.0 6.0
OTA201	Assistive Technology	Specialized assistive technology items: car modifications, power wheel chair options, adaptive toys and switches, seating systems, orthotics and prosthetics, and apps for therapeutic use. Emphasis on identifying need, referral process, and funding sources.	Prerequisites: A grade of C or better in OTA157.	LEC 2.0 2.0 2.0
OTA205	Fieldwork: Geriatric	Introductory level clinical fieldwork experience with a geriatric population. Application of learning with focus on exhibiting professional behavior, professional communication, clinical observation skills, and implementation of selected geriatric treatment strategies and modifications.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in OTA157. Corequisites: OTA207.	LAB 0.5 2.5 0.0
OTA207	Occupational Therapy Assistant in Geriatrics	Impact of aging on occupational performance. Physical, sensory, and cognitive changes associated with aging. Social, psychological, and cultural impact on aging. Common and emerging contexts of service provision. Focus on synthesizing learning and implementing treatment techniques with aging population.	Prerequisites: A grade of C or better in OTA157.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0

OTA215	Fieldwork: Pediatric I	Introductory-level fieldwork experience in a pediatric context. Emphasis on demonstrating professional behavior, professional communication, clinical observation skills, selecting age-appropriate therapeutic activities, and applying therapeutic use of self with a culturally diverse pediatric client population.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in OTA157. Corequisites: OTA217.	LAB 0.5 2.5 0.0
OTA217	Occupational Therapy Assistant in Pediatrics	Distinguishes between typical and atypical pediatric development. Common pediatric health conditions of infants, children, and adolescents. Occupational therapy practice models, theories, and delivery contexts found in pediatrics. Focus on synthesizing prior learning and specific pediatric treatment activities to develop pediatric treatment plans.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in OTA157.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
OTA234	Occupational Therapy Assistant Professional Standards	Preparation for transition into level 2 fieldwork. Focus on supervisory structures, professional ethics, legislative issues, licensure requirements, evidence based practice, and reimbursement systems. Topics include program planning, marketing, quality assurance. Assessment of personal and professional competencies during resume and portfolio development.	Prerequisites: A grade of C or better in OTA157.	LEC 2.0 2.0 2.0
OTA255	Fieldwork: Adult	Clinical experience under the direct supervision of experienced occupational therapists (OTs) or occupational therapy assistants (OTAs) in a context primarily serving adult clients. Emphasis is placed on clinical preparation for entry-level practice as an OTA.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in (OTA207, OTA217, and OTA234). Corequisites: OTA284.	LAB 4.0 21.0 0.0

OTA265	Fieldwork: Pediatric II	Secondary clinical experience under the direct supervision of experienced occupational therapists (OTs) or occupational therapy assistants (OTAs) in a context primarily serving pediatric clients. Emphasis is placed on clinical preparation for entry-level practice as an OTA.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in (OTA207, OTA217, and OTA234).	LAB 4.0 21.0 0.0
OTA284	Occupational Therapy Assistant Professional Transition	Integration of clinical experiences during level 2 fieldwork with theoretical models and didactic learning. Preparation for licensure and National Board for Certification in Occupational Therapy (NBCOT) examination. Focus on self-assessment, study skills, comprehensive content review, and fieldwork review.	Prerequisites: Admission to the Occupational Therapy Assistant program and a grade of C or better in (OTA207, OTA217, and OTA234).	LEC 2.0 2.0 2.0
PAD100	21st Century Public Policy and Service	Introduction to topics pertaining to public policy and public service in the 21st century. Includes formation, implementation, and evaluation procedures for public policy, as well as roles and agendas of policy makers and public administrators. Also covers careers in public service/administration and an evaluation of essential skills necessary for a career in public service.	Prerequisites: None.	LEC 3.0 3.0 3.0
PAD101	Survey of Public Administration	The history, present and future of public administration. Covers roles of public administrators, organizational relationships, intergovernmental relations and human resources as well as ethical issues, financial management, communication skills, and productivity issues	Prerequisites: None.	LEC 3.0 3.0 3.0
PAD102	Legal Services: Office Essential Skills	Overview of essential workplace skills for legal services. Includes fundamental knowledge of office etiquette, systems, and procedures. Also covers oral and written presentations, office confidentiality, and conflict management.	Prerequisites: None.	LEC 2.0 2.0 2.0

PAD103	Legal Services: Office Career Preparation	Career preparation and development in the legal services office environment. Includes identification and development of personal career goals along with strategies for evaluating career opportunities. Covers professional image, office behaviors and skills, as well as strategies for writing effective resumes and interviewing techniques.	Prerequisites: None.	LEC 2.0 2.0 2.0
PAD107	Public Finance Administration	Basic overview of public finance system for state and local government. Includes budgeting processes, revenue and funding sources involving taxes and revenue forecasting. Also covers capital planning, debt management, performance measurement, financial statements, and auditing.	Prerequisites: A grade of C or better in CIS114DE.	LEC 3.0 3.0 3.0
PAD110	Criminal Charging Administration	Procedures for processing charges. Emphasis on the selection and completion of paperwork necessary to process charges against individuals or specific individual typologies. Covers form interpretation, auxiliary form selection and completion, and legal filing procedures. Includes reference material usage and abbreviation and acronym interpretation information.	Prerequisites: None.	LEC 3.0 3.0 3.0
PAD112	Court Record Administration	Court trial information notation and preservation procedures. Emphasis on computer based record keeping system usage. Covers case assignment creation, case routing procedures, document generation and templates, and dual notation procedures. Also includes document generation reference guide usage information.	Prerequisites: None.	LEC 2.0 2.0 2.0

PAD116	Supervisory Training for DOC Employees	Overview of first line supervisory skills. Includes communication and team building skills. Emphasis on basic supervisory and leadership skills	Prerequisites: None.	LEC 3.0 3.0 3.0
PAD122	Public Sector Human Resources Management	Overview of human resources management in the public sector. Covers planning, staffing, training, compensating, and appraising employees in labor management relationships.	Prerequisites: A grade of C or better in CIS114DE.	LEC 3.0 3.0 3.0
PAD170	Public Sector Organizational Behavior	Basic principles of public-sector management from an organizational behavior perspective. Levels of organizational behavior: the individual, the group and the organization system emphasized	Prerequisites: None.	LEC 3.0 3.0 3.0
PAD200	Public Affairs Economics	Introduction to the use of macroeconomic and microeconomic principles concerning public affairs and social issues. Includes the role of economics in societal development and public policies in addition to the effects of unemployment and inflation. Also covers measurement of, causes for and societal responses to poverty.	Prerequisites: A grade of C or better in PAD100 or permission of Instructor.	LEC 3.0 3.0 3.0
PAD210	Fundamentals of Real Property Appraisal	Procedures and techniques for estimating market value of vacant and improved properties. Includes appraisal theory, assessment procedures, and appraisal/assessment techniques in addition to land description and land valuation. Also covers definitions and structure of cost and various types of cost estimates as well as procedures for determining depreciation	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0

PAD212	Valuation Concepts and Cost Appraisal Methods	Functions of the assessor and appraiser. Covers the nature and principles of value, assessment, as well as appraisal processes. Emphasis on property owner rights and limitations including an overview of the Arizona Property Tax System. Also covers use of a construction cost system.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
PAD214	Land Valuation	Analysis of land valuation procedures. Covers maps, land value factors, and ownership as well as systems of land identification. Includes site data units of comparison and market influences in addition to Arizona statutes and precedents related to special land valuation.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
PAD216	Basic Ad Valorem Appraisal Concepts	Basic assessment and valuation practices for mixed-use properties, partially complete structures, and salvage properties. Also covers the construction cost system, cost components, and market adjustments as well as methods for measuring depreciation. Also includes market value and ratio studies.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
PAD218	Personal Property Valuation	Overview of personal property valuation in the state of Arizona. Includes procedures and forms for the valuation process, as well as mobile home classification and affixture requirement. Also covers year/life tables and depreciation calculations.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
PAD220	Income Approach to Valuation	Principles for the income approach to valuation. Includes an overview of real estate investment and finance as well as development of net operating income estimates. Also covers contemporary and historical capitalization methods and procedures for developing capitalization rates	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0

PAD222	Intermediate Ad Valorem Appraisal Concepts	Procedures for Ad Valorem Appraisal. Covers sales ratio studies, appraisal level, and uniformity as well as mixed-use assessment ratios. Also includes Centrally Valued Properties, Direct Sales Comparison, and Income Value calculations.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
PAD224	Hearing Procedures	Preparation for hearing procedures. Emphasis on presentation techniques, documentation, and organization of Assessor's records as well as property classification and confirmation. Also covers analysis of and response to appellant arguments and completion of the administrative appeal process.	Prerequisites: Permission of Department or Division.	L+L 2.0 3.0 3.0
PAR101	Introduction to the Paralegal Profession	Comprehensive introduction into the legal profession with a focus on the paralegal's role. Introduction into legal terminology, basic legal principles, and the parties involved in the legal system.	Prerequisites: None.	LEC 3.0 3.0 3.0
PAR102	Paralegal Research, Analysis, and Writing I	Introduction into legal research, analysis and writing. Covers legal research binding, persuasive authority, and use of legal citation. Includes components and use of case law and briefs in addition to use of secondary sources and digests. Also covers electronic legal research and research plans.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and (BPC110 or CIS105) and (CRE101 or equivalent as indicated by assessment).	LEC 3.0 3.0 3.0
PAR103	Paralegal Research, Analysis, and Writing II	Advanced legal writing and research. Analysis and application of the writing process to produce well-written documents commonly used in the practice of law. Covers various types of legal writing, including memorandum of law, persuasive writing, and legal correspondence. The use of proper grammar, punctuation, and spelling in the construction of sentences and the development of paragraphs.	Prerequisites: A grade of C or better in PAR102.	LEC 3.0 3.0 3.0

PAR104	Ethics for the Paralegal	Paralegal rules of professional responsibility and ethical requirements. Includes regulation of the profession as well as unauthorized practice of law and confidentiality. Also covers conflict of interest, competence, and negligence.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and (BPC110 or CIS105) and (CRE101 or equivalent as indicated by assessment) and PAR103.	LEC 3.0 3.0 3.0
PAR106	Legal Foundations for Paralegals	Legal principles of tort, contract, and criminal law. Includes roles and responsibilities of court systems, the legal community, and the paralegal. Also covers procedures for preparing cases for trial, adjudication, and post-trial.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and (BPC110 or CIS105) and (CRE101 or equivalent as indicated by assessment) and PAR103.	LEC 3.0 3.0 3.0
PAR112	Civil Litigation I	Responsibilities of the paralegal in the civil litigation process. Includes review of the American court system and techniques for case investigation. Also covers case management and evidence procedures as well as settlements and pleadings.	Prerequisites: A grade of C or better in (ENG101 or ENG107) and (BPC110 or CIS105) and (CRE101 or equivalent as indicated by assessment).	LEC 3.0 3.0 3.0
PAR114	Civil Litigation II	Civil litigation responsibilities of the paralegal in the areas of discovery, depositions, pretrial, and post-trial procedures. Includes preparation of clients, witnesses, and exhibits for the courtroom. Also covers responsibilities of the paralegal in the evidentiary phase of trial, post-trial, and the appeals process in addition to collection and enforcement of judgments.	Prerequisites: A grade of C or better in PAR112.	LEC 3.0 3.0 3.0
PAR206	Paralegal Business Law	Overview of business law for the paralegal. Includes a review of basic contract formation and enforcement. Also covers property and ownership characteristics and operations in addition to a comparison of various types of business organizations.	Prerequisites: A grade of C or better in PAR106 and PAR114.	LEC 3.0 3.0 3.0



PAR208	Introduction to Tort Law	Introduction to tort law and the responsibilities of the paralegal. Includes elements of types of various types of torts, negligence and defenses in addition to classification of and legal issues pertaining to damages. Also covers insurance and its application to tort law as well as procedures for records evaluation and calculation of net settlements.	Prerequisites: A grade of C or better in PAR106 and PAR114.	LEC 3.0 3.0 3.0
PAR224	Law Office Technology for the Paralegal	Technology resources and procedures for the law office. Includes types of hardware and software in addition to office security. Also covers paperless office and electronic research procedures as well as use of trial presentation software.	Prerequisites: A grade of C or better in PAR104 or Corequisites: PAR104.	LEC 3.0 3.0 3.0
PAR230	Family Law for the Paralegal	Paralegal responsibilities in the area of family law. Includes procedures for the initial client interview as well as drafting of applicable documents in dissolution, post-decree, and custody proceedings. Also covers discovery tools and procedures in addition to methods for valuation and division of assets	Prerequisites: A grade of C or better in PAR114.	LEC 3.0 3.0 3.0
PAR232	Bankruptcy Law for the Paralegal	Paralegal responsibilities in the area of bankruptcy law. Emphasis on chapters 7, 11, and 13 of the bankruptcy code of Title 11 of the United States Code. Also covers bankruptcy documentation, automatic stay, dischargeable and nondischargeable debts, and bankruptcy case dismissals, conversions, and transfers	Prerequisites: A grade of C or better in PAR114.	LEC 3.0 3.0 3.0

PAR233	Real Estate Law for the Paralegal	Paralegal responsibilities in the area of real estate law. Covers real estate transactions and agreements of sale as well as title and deed procedures. Also includes procedures for completing title abstractions and legal documentation pertinent to arbitration and foreclosure. The role of the paralegal in completing real estate client interviews also covered	Prerequisites: A grade of C or better in PAR114.	LEC 3.0 3.0 3.0
PAR234	Administrative Law for the Paralegal	Paralegal responsibilities in the area of administrative law. Overview of types and sources of administrative law. Includes accountability, agency discretion and due process in addition to delegation and rule-making. Also covers agency investigations and adjudication procedures	Prerequisites: None.	LEC 3.0 3.0 3.0
PAR236	Estate Law for the Paralegal	Paralegal responsibilities in the area of estate law. Includes estate planning and administration. Covers procedures for preparing wills and trusts in addition to handling probate issues	Prerequisites: A grade of C or better in PAR114.	LEC 3.0 3.0 3.0
PAR237	Paralegals and Environmental Law	Overview of role and key responsibilities of a paralegal supporting environmental law concerns. Covers the essentials of environmental law, including types of organizations and agencies. Also covered, process of environmental laws and rulemaking with an emphasis on major environmental acts.	Prerequisites: A grade of C or better in PAR106 or permission of Department or Division.	LEC 3.0 3.0 3.0
PAR238	Paralegals and Immigration Law	Overview of role and key responsibilities of a paralegal working with immigration law cases. Includes immigration laws and essentials of federal regulations. Covers process and procedures for citizenship and naturalization including, establishing temporary and permanent legal citizenship and types of visas. Also includes process for application and appeals.	Prerequisites: A grade of C or better in PAR106 or permission of Department or Division.	LEC 3.0 3.0 3.0

PAR239	Legal Investigation	Overview of role and key responsibilities of a legal investigator. Covers the process for conducting an interview including discovery methods and research techniques. Also covers procedures for documenting and writing accurate statements and preparing legal evidence and exhibits for trial.	Prerequisites: A grade of C or better in PAR106 or permission of Department or Division.	LEC 3.0 3.0 3.0
PAR240	Introduction to eDiscovery for the Paralegal	Overview of electronic discovery and the impact of electronic data on the legal field. Includes a review of the development of technology assisted review (TAR), preservation procedures, and collection methods for electronic stored information (ESI). Also covers changes in civil rules of procedure and ethical duties for legal professionals.	Prerequisites: None.	LEC 3.0 3.0 3.0
PAR241	Introduction to Legal Project Management	Introduction to legal project management topics and procedures. Includes objectives of and benefits to legal project management implementation. Also covers key issues in project management, including scope, task identification and management, budgeting, risk, quality management, communication and negotiation procedures, and techniques.	Prerequisites: None.	LEC 3.0 3.0 3.0
PAR242	e-Discovery Project Management	e-Discovery project management procedures. Includes roles and responsibilities of the project management and e-discovery teams in the various phases, including scoping, detailed planning, startup, execution, and closeout. Covers project manager duties throughout the process, including the archiving and disposition of data, and creation of final performance metric results. Review of benefits of e-discovery to clients and legal teams.	Prerequisites: None.	LEC 3.0 3.0 3.0

PAR260	Legal Career Preparation	Overview of the essential skills necessary for the paralegal student in the internship environment. Covers essential skills, self-evaluation and resources available to the paralegal.	Prerequisites: A grade of C or better in PAR114.	LEC 1.0 1.0 1.0
PAR290AA	Internship for the Paralegal	Paralegal work experience in industry. Eighty (80) hours of designated work per credit	Prerequisites: Permission of Department or Division.	L+L 1.0 1.0 1.0
PAR290AB	Internship for the Paralegal	Paralegal work experience in industry. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division. Corequisites: PAR260.	L+L 2.0 2.0 2.0
PCM150	Tools for Exterior and Veneer Systems	Proper and safe apparel for plasters and cement masons. Tools used plasters and cement masons. Application of exterior insulating finish systems (EIFS). Mixing primus/adhesive and installation of EIFS board. Types of exterior finishes, basecoats and their applications. Basecoat application, three-coat and two-coat processes. Leveling technique for the brown coat. Factors that impact admixers, setting times, bonding, drying times, temperature, and curing. Factors that impact stucco and veneer finishes	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
PCM152	Cement Pouring and Finishing	Trade terms, history of cement development, types and uses of "portland" cement, aggregates and admixtures. Hand and power tools, form construction, concrete placement and finishing and the construction of tilt-up, precast and lift slabs	Prerequisites: None.	LEC 5.0 5.0 5.0
PCM153	Sketching and Plan Reading	Sketches and sketching procedures used in construction including "scale", sectional views and isometric drawings. Blueprint and plan reading for construction. Frame buildings, detail drawings and roof framing plans.	Prerequisites: (Registered apprentice status and a grade of C or better in PCM152) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

PCM154	Architectural Drawing and Blueprint Reading	Architectural drawings and sketches in construction. Reading and interpreting plot plans, blueprints and detail drawings. Relationship of specification sheets to construction blueprints.	Prerequisites: (Registered apprentice status and a grade of C or better in PCM153) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
PCM155	Estimating for the Concrete Trade	Mixing concrete and uses of concrete in construction. Calculations of amounts of concrete and forming material required for specific construction tasks. Quantity take-offs for construction projects. Calculation of labor costs.	Prerequisites: (Registered apprentice status and a grade of C or better in PCM152) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
PCM156	Building Codes: Concrete	Provisions of the Uniform Building Code pertaining to the mixing, conveying, placing, reinforcing, finishing and curing of concrete.	Prerequisites: (Registered apprentice status and a grade of C or better in PCM152) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
PCM157	Trade Math and Safety for Concrete	Application of mathematic concepts and operations for the construction trades. Introduction to safety rules and practices for workers in the concrete trade	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
PCM202	Interior and Exterior Basecoat	Safety in the Mason's workplace. Types, characteristics, uses, mixing and application of basecoat gypsum plasters. Characteristics, uses, and application of Portland cement. Mortar production. Three-coat and two-coat processes. Brown coat for gypsum plaster, brick, tile, and other masonry bases. Straightening and leveling of brown coat. Conventional and monolithic methods of plastering. Use and application of Portland cement/stucco	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0

PCM204	Advanced Veneer Systems	Principles and techniques of advanced veneer systems. Joint reinforcing methods with one-coat and two-coat veneer systems. Precautions, application, usage, mixtures, and hardening/set up for gypsum finish coat plasters, gauging plasters and lime putty. Keenes cement, interior prepared gypsum, float finishes and Portland cement finishes	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
PCM206	Molding Cornice	Processes for molding cornice. Exposed aggregate finishes and application of aggregate. Binding agents, safety and epoxy, trowel and stone-seeded on aggregate. Murals and specialty finishes. Ceiling corning, tools and job site factors. Product quality control	Registered Apprentice with the Phoenix Plasterers and Cement Masons Joint Apprenticeship Training Committee or permission of Instructor.	LEC 5.0 5.0 5.0
PCM296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

PCM296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
PCM296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
PCM296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

PCM298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PCM298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
PCM298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PED101	Physical Activities: Basic	Individual, dual, or team sports activities at the basic level.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101AD	Aerobic Dance	A cardiovascular workout through dance.	Prerequisites: None.	L+L 1.0 2.0 2.0



PED101AK	Aikido	Covers the fundamentals of Aikido including rules, moves, and traditional discipline of the sport.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101AP	Adapted PE	Fitness for persons with disabilities.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101AQ	Aquatic Fitness	This aquatic fitness class offers knowledge and skills to keep fit for life. It teaches safe performance of movement and exercise in a progressive approach and offers an opportunity to improve and/or maintain a high level of fitness through application of aerobic training principles in an aquatic environment. Swimming skills are not required. This class is designed for all fitness levels. Students are encouraged to understand their own limitations and work within their bounds.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BA	Baseball	Basic skills and game strategy of baseball. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BB	Basketball	Basic skills and game strategy of basketball. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BC	Boot Camp	Vigorous physical and mental conditioning incorporating cardiovascular, core fitness, strength training, and flexibility. Emphasis will be placed on proper body mechanics and safety.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BD	Ballroom Dancing	Basic level instruction on ballroom dancing footwork, timing, techniques, and style. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BE	Belly Dance	Practice and demonstration of basic belly dance skills and movements. Basic posture and muscularity, primary upper and lower body isolations, footwork, simple combination movements. Rhythms broken down, and at least one prop demonstrated. Basic routine, improvisation, and current styles and trends in belly dance. Belly dance etiquette and attire.	Prerequisites: None.	L+L 1.0 2.0 2.0

PED101BL	Ballet	Basics of ballet incorporating steps, poses, and graceful movements including leaps and spins.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BP	Backpacking	Covers basic skills and techniques of backpacking and the application of these to wilderness travel.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BS	Body Sculpting	Stretch and strengthen. Emphasizes increasing fitness, muscle tone, and body flexibility. Great for reducing stress.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101BW	Bowling	Fundamental skills of bowling, including scoring and competition.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101CD	Country Dance	Popular country dances including Arizona Two Step, Progressive Two Step and other current popular dances. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101CP	Camping	Learn the skills of camping in an outdoor setting. Length of overnight stay varies.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101CY	Cycling - Indoor	Basic skills for bike set up and proper body mechanics. Increase leg strength, lung capacity, and metabolism.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101DF	Self Defense	Basic self-defense skills, ground-fighting skills, and stand-up fighting capabilities. Modified for all skill levels. Practice is based on real-life experiences and endurance enhanced drills. Develops self confidence.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101DS	Dance Sampler	Variety of the most basic and popular social dances including Merengue, Waltz, Salsa, Swing, Foxtrot and others. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101FB	Football	Basic skills and game strategy of football. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101FE	Fencing	Introduction to the sport of fencing. Instruction and practice in proper body mechanics with the use of a foil, saber, and epee.	Prerequisites: None.	L+L 1.0 2.0 2.0

PED101FL	Fitness for Life	Learn the basics of designing and implementing a personalized fitness program to meet your needs in the areas of Cardiovascular Fitness, Weight Control, Muscular Strength and Flexibility.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101FW	Fitness Walking	Development of safe and effective walking skills through proper exercises and use of equipment to enhance a walking program.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101GF	Group Fitness/Aerobics	Group exercise incorporating a variety of equipment to increase respiration, heart rates, strength, and flexibility.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101GO	Golf	Instruction and practice for all skill levels, beginning through advanced. Assistance on shot making, club selection and etiquette on the course.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101HH	Hip Hop	Basic skills of hip hop with instruction, practice, and performance including proper body mechanics, choreography, and behavioral competencies.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101HK	Hiking	Develop safe and effective hiking skills. Essentials and requirements for safe hiking; proper hiking clothing and attire; impact of hiking on the environment.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101JR	Jogging/Running	Introduction to jogging/running. Learn proper technique to decrease injury and increase training distance. All skill levels welcome.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101JS	Japanese Swordmanship	Vigorous martial arts swordmanship training program utilizing historical principles that promotes the development of fitness, coordination, agility, balance, mindfulness/focus, and knowledge of strategy.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101JU	Judo	Japanese martial art in which opponents use balance and body weight to throw, pin and lock.	Prerequisites: None.	L+L 1.0 2.0 2.0

PED101JZ	Jazz	Learn various dance skills characterized by the use of improvisation and influenced by rhythms and techniques of Jazz music.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101KA	Karate	Training emphasizes fundamentals, traditional form, and applied sparring that follows the theory of Karate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101KB	Kickboxing	Techniques to increase muscular endurance and strength, enhance flexibility and increase body awareness and self-confidence. Jabs, kicks, and blocks will be used in this martial arts based workout.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101KF	Kung Fu	Techniques of one of the most comprehensive martial arts in China.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101LD	Latin Dancing	Spicy, energetic style of dance. Cha Cha, Merengue, Salsa, Rumba, and Bolero. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101MD	Modern Dance	Learn the skills and techniques to express yourself through dance. Practice and drills included.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101PC	Physical Conditioning	Exercise program with access to free weights, strength machines and cardio equipment.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101PS	Pilates	Mat-based exercise system focused on improving flexibility and strength for the total body. Teaches core control and stabilization while improving postural alignment.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101QG	Qi Gong	Ancient Chinese Qi Gong breathing exercises for healing and opening channels of energy. Includes Power of Positive thought along with relaxation and meditation techniques.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101RC	Rock Climbing	Beginning climbing skills including equipment, knots, anchoring, belaying, and climbing techniques in an indoor climbing gym. No previous experience needed. Develop strength and confidence.	Prerequisites: None.	L+L 1.0 2.0 2.0

PED101RQ	Racquetball	Basic skills and game strategy of racquetball. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SA	Salsa	Basic moves for the popular, hot Latin dance Salsa. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SB	Softball	Basic skills and game strategy of softball. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SD	Social Dance	Introduction to various dances encountered in a social setting. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SK	Downhill Snow Skiing	Basics of downhill skiing. All skill levels welcome.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SM	Swimming	This swimming course is designed to improve cardiovascular fitness, flexibility and muscular endurance in an aquatic environment. Students will learn the basic swim strokes, breathing techniques and tips for improving efficiency in the water.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SO	Soccer	Basic skills and game strategy of soccer. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SR	Stretch and Relaxation	A mat-based stretching class with guided meditation. Stretching increases flexibility and relieves stress, promoting an overall sense of well being.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101ST	Strength Training	Introduction to techniques of basic weight training, concentrating on incorporating an exercise regimen for increased strength.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101SU	SCUBA Diving	Introduction to the theory and practice of SCUBA diving. Course includes lectures, pool dives, open water dives, and SCUBA Certification.	Prerequisites: None.	L+L 1.5 2.5 2.5
PED101SW	Swing Dancing	Popular Swing dance moves and rhythms, including basic Lindy. All students will rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101TA	Tango	Beginning, basic footwork and body mechanics for Tango. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0

PED101TC	Tai Chi	Fundamentals of Tai Chi including moves, breathing and meditation.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101TD	Tap Dance	Introduction to Tap a step dance performed with the use of shoes with metal tips making rhythmic sounds.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101TE	Tennis	Basic skills and game strategy of tennis. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101TF	Track and Field	Instruction and practice in track and field events, running, throwing and jumping.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101TK	Taekwondo	Fundamentals of Taekwondo including the moves, rules, and traditional discipline of the sport.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101TT	Triathlon Training	Train for triathlons. Beginners to elite. Learn training techniques for triathlon competition: Swim, Bike, Run.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101TX	Suspension Training	Suspension training using TRX or similar equipment. Designed to develop strength, balance, flexibility and core stability. Incorporates a variety of exercises using adjustable positions, stability levels and intensities. Suitable for all skill levels.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101VB	Volleyball	Basic skills and game strategy of volleyball. Class emphasis on competition and drills.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101WS	West Coast Swing	Basic patterns and rhythms of the classic dance style of West Coast Swing. Partners rotate.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101WT	Weight Training	Access to Olympic and Free Weights with a qualified instructor.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101WW	Weight Training for Women	Introduction for women to the use of free weights, strength machines and cardio equipment.	Prerequisites: None.	L+L 1.0 2.0 2.0

PED101YG	Gentle Yoga	Focuses on the use of such props as blankets, blocks, and chairs to modify traditional Yoga poses, enabling participation with moderate effort and without strain; suitable for all levels but especially for students needing a slower pace.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101YH	Hatha Yoga	Combination of traditional and flow style yoga that utilizes breathing, yoga poses, relaxation and meditation to create balance and inner peace.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101YI	Iyengar Yoga	Form of Hatha Yoga using various props such as belts, blocks, and straps used to focus on precise body alignment.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101YK	Kundalini Yoga	Energetically guided Yoga focusing on psycho-spiritual growth with special consideration of the spine and endocrine system.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101YO	Yoga	Promotion of overall health by strengthening muscles and stimulating glands and organs. Basic postures, breathing and relaxation techniques.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101YP	Power Yoga	Yoga postures performed in a dynamic series designed to gain strength, add flexibility, release toxins, This is a vigorous, athletic form of yoga.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101YR	Restorative Yoga	Gentle form of Yoga poses utilizing props to create fully supported postures; focuses on relaxation and involves non-rigorous physical activity, providing rest and recovery and promoting the restoration of tranquility; suitable for all levels.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED101ZU	Zumba Fitness	Zumba dynamic fitness program. Features high energy, easy to follow rhythmic moves set to energizing Latin and international beats. Provides an enjoyable way to increase fitness level.	Prerequisites: None.	L+L 1.0 2.0 2.0

PED102	Physical Activities: Intermediate	Individual, dual, or team sports activities at the intermediate level.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102BA	Baseball - Intermediate	To improve upon basic skills and game strategy of baseball at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102BB	Basketball - Intermediate	To improve upon basic skills and game strategy of basketball at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102BC	Boot Camp - Intermediate	Vigorous training at an intermediate level incorporating cardiovascular, core fitness, strength training, and flexibility. Emphasis will be placed on proper body mechanics and safety.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102BD	Ballroom Dancing - Intermediate	Intermediate level instruction on ballroom dancing footwork, timing, techniques, and style. Partners rotate.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102BE	Belly Dance - Intermediate	Practice and demonstration of basic belly dance skills and movements at the intermediate level. Posture and muscularity, primary upper and lower body isolations, footwork, intermediate level combination movements. Rhythms broken down, and at least two props demonstrated. Routine, improvisation, and current styles and trends in belly dance. Belly dance etiquette and attire.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102BL	Ballet - Intermediate	Ballet steps, poses and graceful movements including leaps and spins at the intermediate level.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102CH	Cheerleaders - Intermediate	Intermediate skills of cheerleading with instruction, practice, and performance including proper body mechanics, choreography, and behavioral competencies.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0



PED102DF	Self Defense - Intermediate	Intermediate self-defense skills, ground-fighting skills, and stand-up fighting capabilities. Practice is based on real-life experiences and endurance enhanced drills. Develops self confidence. Not recommended for beginners.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102FB	Football - Intermediate	Improve upon basic skills and game strategy of football at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102FE	Fencing - Intermediate	Build upon the basic skills in the sport of fencing. Intermediate level instruction in the use of a foil, saber, and epee. Emphasis on skill practice and competition.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102FL	Fitness for Life - Intermediate	Intermediate level design and implementation of a personalized fitness program to increase your fitness level in the areas of Cardiovascular Fitness, Weight Control, Muscular Strength and Flexibility.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102GO	Golf - Intermediate	Improving techniques of putting, chipping, the full swing, rules and scoring will be covered in this class.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102HH	Hip Hop - Intermediate	Intermediate level dance instruction and practice in the skills of hip hop. Emphasis on performance including proper body mechanics, choreography, and behavioral competencies.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102HK	Hiking - Intermediate	Improve your hiking skills on more challenging terrain. Includes Physical training.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102JR	Jogging/Running - Intermediate	Intermediate training for jogging/running. Learn proper technique to decrease injury and increase training distance. Not recommended for beginners.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0

PED102JS	Japanese Swordmanship - Intermediate	Intermediate level of vigorous martial arts swordmanship training program utilizing historical principles that promotes the development of fitness, coordination, agility, balance, mindfulness/focus, and knowledge of strategy.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED102JZ	Jazz - Intermediate	Intermediate dance skills for dancing Jazz. Not recommended for beginners.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102KA	Karate - Intermediate	Applied technique and theory of Karate at the intermediate level.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102KB	Kickboxing - Intermediate	Intermediate level kickboxing techniques to increase muscular endurance and strength, enhance flexibility and increase body awareness and self- confidence. Not recommended for the beginner.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102LD	Latin Dancing - Intermediate	Incorporate intermediate dance moves while performing Latin Dance.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102PC	Physical Conditioning - Intermediate	Intermediate level exercise program with access to free weights, strength machines and cardio equipment. Not recommended for the beginner.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102PS	Pilates - Intermediate	Intermediate level Mat-based exercise system focused on improving flexibility and strength for the total body. Teaches core control and stabilization while improving postural alignment.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102RC	Rock Climbing - Intermediate	Improve upon basic skills of climbing including, knots, anchoring, belaying, and climbing techniques in an indoor climbing gym. Develop strength and confidence.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102SA	Salsa - Intermediate	Learn the intermediate dance moves for Salsa. Not recommended for the beginning Salsa dancer.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102SB	Softball - Intermediate	Improve upon basic skills and game strategy of softball at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0

PED102SO	Soccer - Intermediate	To improve upon basic skills and game strategy of soccer at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102ST	Strength Training - Intermediate	Intermediate techniques of strength training, concentrating on incorporating an exercise regimen for increased strength and endurance. Not recommended for the beginning weight lifter.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102SW	Swing Dancing - Intermediate	Learn the intermediate dance moves for Swing Dancing.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102TC	Tai Chi - Intermediate	Intermediate level techniques of Tai Chi including moves, breathing and meditation.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102TD	Tap Dance-Intermediate	Tap dance steps at the intermediate level. Some experience welcomed	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102TE	Tennis - Intermediate	Improve upon basic skills and game strategy of tennis at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102TF	Track and Field - Intermediate	To improve upon basic track and field event skills at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102TK	Taekwondo - Intermediate	Intermediate level training in Taekwondo.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102TT	Triathlon Training - Intermediate	Intermediate level training for triathletes. Improve your training techniques for triathlon competition: Swim, Bike, Run.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102VB	Volleyball - Intermediate	Improve upon basic skills and game strategy of volleyball at the intermediate level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102WT	Weight Training - Intermediate	Increase knowledge and training with a qualified instructor on the use of Olympic and Free Weights.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102WW	Weight Training for Women - Intermediate	Intermediate level instruction for women on the use of free weights, strength machines and cardio equipment.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0

PED102YO	Yoga - Intermediate	Yoga for the experienced practitioner.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED102YP	Power Yoga - Intermediate	Intermediate level Yoga postures performed in a dynamic series designed to gain strength, add flexibility, release toxins, This is a vigorous, athletic form of yoga.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED103	Physical Activities: Basic	Individual, dual, or team sports activities at the basic level.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103AQ	Aquatic Fitness	This aquatic fitness class offers knowledge and skills to keep fit for life. It teaches safe performance of movement and exercise in a progressive approach and offers an opportunity to improve and/or maintain a high level of fitness through application of aerobic training principles in an aquatic environment. Swimming skills are not required. This class is designed for all fitness levels. Students are encouraged to understand their own limitations and work within their bounds.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103BA	Baseball	Basic skills and game strategy of baseball. Class emphasis on competition and drills.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103BC	Boot Camp	Vigorous physical and mental conditioning incorporating cardiovascular, core fitness, strength training, and flexibility. Emphasis will be placed on proper body mechanics and safety.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103BD	Ballroom Dancing	Basic level instruction on ballroom dancing footwork, timing, techniques, and style. Partners rotate.	Prerequisites: None.	L+L 0.5 1.0 1.0

PED103BE	Belly Dance	Practice and demonstration of basic belly dance skills and movements. Basic posture and muscularity, primary upper and lower body isolations, footwork, simple combination movements. Rhythms broken down, and at least one prop demonstrated. Basic routine, improvisation, and current styles and trends in belly dance. Belly dance etiquette and attire.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103BS	Body Sculpting	Stretch and strengthen. Emphasizes increasing fitness, muscle tone, and body flexibility. Great for reducing stress.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103CD	Country Dance	Popular country dances including Arizona Two Step, Progressive Two Step and other current popular dances. Partners rotate.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103CY	Cycling - Indoor	Basic skills for bike set up and proper body mechanics. Increase leg strength, lung capacity, and metabolism.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103DF	Self Defense	Basic self-defense skills, ground-fighting skills, and stand-up fighting capabilities. Modified for all skill levels. Practice is based on real-life experiences and endurance enhanced drills. Develops self confidence.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103GF	Group Fitness/Aerobics	Group exercise incorporating a variety of equipment to increase respiration, heart rates, strength, and flexibility.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103HK	Hiking	Develop safe and effective hiking skills. Essentials and requirements for safe hiking; proper hiking clothing and attire; impact of hiking on the environment.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103KB	Kickboxing	Techniques to increase muscular endurance and strength, enhance flexibility and increase body awareness and self-confidence. Jabs, kicks, and blocks will be used in this martial arts based workout.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103KF	Kung Fu	Techniques of one of the most comprehensive martial arts in China.	Prerequisites: None.	L+L 0.5 1.0 1.0

PED103LD	Latin Dancing	Spicy, energetic style of dance. Cha Cha, Merengue, Salsa, Rumba, and Bolero. Partners rotate.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103PC	Physical Conditioning	Exercise program with access to free weights, strength machines and cardio equipment.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103PS	Pilates	Mat-based exercise system focused on improving flexibility and strength for the total body. Teaches core control and stabilization while improving postural alignment.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103QG	Qi Gong	Ancient Chinese Qi Gong breathing exercises for healing and opening channels of energy. Includes Power of Positive thought along with relaxation and meditation techniques.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103SA	Salsa	Basic moves for the popular, hot Latin dance Salsa. Partners rotate.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103SM	Swimming	This swimming course is designed to improve cardiovascular fitness, flexibility and muscular endurance in an aquatic environment. Students will learn the basic swim strokes, breathing techniques and tips for improving efficiency in the water.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103SR	Stretch and Relaxation	A mat-based stretching class with guided meditation. Stretching increases flexibility and relieves stress, promoting an overall sense of well being.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103ST	Strength Training	Introduction to techniques of basic weight training, concentrating on incorporating an exercise regimen for increased strength.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103TC	Tai Chi	Fundamentals of Tai Chi including moves, breathing and meditation.	Prerequisites: None.	L+L 0.5 1.0 1.0

PED103TX	Suspension Training	Suspension training using TRX or similar equipment. Designed to develop strength, balance, flexibility and core stability. Incorporates a variety of exercises using adjustable positions, stability levels and intensities. Suitable for all skill levels.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103VB	Volleyball	Basic skills and game strategy of volleyball. Class emphasis on competition and drills.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103WT	Weight Training	Access to Olympic and Free Weights with a qualified instructor.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103WW	Weight Training for Women	Introduction for women to the use of free weights, strength machines and cardio equipment.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103YE	Eclectic Yoga	Eclectic style of Hatha Yoga made up of elements from many different styles of Yoga.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103YG	Gentle Yoga	Focuses on the use of such props as blankets, blocks, and chairs to modify traditional Yoga poses, enabling participation with moderate effort and without strain; suitable for all levels but especially for students needing a slower pace.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103YH	Hatha Yoga	Combination of traditional and flow style yoga that utilizes breathing, yoga poses, relaxation and meditation to create balance and inner peace.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103YI	Iyengar Yoga	Form of Hatha Yoga using various props such as belts, blocks, and straps used to focus on precise body alignment.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103YK	Kundalini Yoga	Energetically guided Yoga focusing on psycho-spiritual growth with special consideration of the spine and endocrine system.	Prerequisites: None.	L+L 0.5 1.0 1.0

PED103YO	Yoga	Promotion of overall health by strengthening muscles and stimulating glands and organs. Basic postures, breathing and relaxation techniques.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103YP	Power Yoga	Yoga postures performed in a dynamic series designed to gain strength, add flexibility, release toxins. This is a vigorous, athletic form of yoga.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103YR	Restorative Yoga	Gentle form of Yoga poses utilizing props to create fully supported postures; focuses on relaxation and involves non-rigorous physical activity, providing rest and recovery and promoting the restoration of tranquility; suitable for all levels.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103ZU	Zumba Fitness	Zumba dynamic fitness program. Features high energy, easy to follow rhythmic moves set to energizing Latin and international beats. Provides an enjoyable way to increase fitness level.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED103ZZ	Zumba Gold(r)	Dynamic Zumba fitness program designed for adults over 55. Incorporates moves and pacing geared to suit the needs of the active older participant as well as those just starting their journey to a fit and healthy lifestyle. Rhythmic moves using energizing Latin and international beats.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED105	Army Master Fitness	Introduces the student to the Army Master Fitness Program. Designed to enhance the student's level of individual fitness and wellness.	Prerequisites: None.	L+L 1.0 3.0 0.0
PED111	Aerobics	Aerobic activity and wellness study to help develop a lifetime of regular exercise, stress management, and proper nutrition. Workout includes warm-up/stretch, aerobic exercise, selected strength exercises, and cool down/stretch	Prerequisites: None.	L+L 1.5 3.0 3.0



PED114	Fitness	Fitness activity and wellness study to help develop a lifetime of regular exercise, stress management, and proper nutrition. Workout includes warm-up/stretch, aerobic exercise, selected strength exercises, and cool down/stretch.	Prerequisites: None.	L+L 1.5 3.0 3.0
PED115	Lifetime Fitness	Increase personal fitness, strength, and vitality. Current principles of cardiovascular exercise, weight training, flexibility, and balance exercises applicable to lifetime fitness goals. Personalized fitness plans developed and implemented with support of highly trained fitness professionals. Techniques to make sessions more effective and enjoyable.	Prerequisites: None.	L+L 2.0 4.0 4.0
PED116	Cardiovascular Fitness	Blends an effective warm-up, challenging cardiovascular and strength/endurance training strategies and a relaxing cool-down. Tailored by certified fitness professionals to personal goals.	Prerequisites: None.	L+L 2.0 4.0 4.0
PED117	Weight Training for Wellness	Strength training and muscular fitness activity to help develop a lifetime of regular exercise and muscular strength maintenance. Development of full body strength and stability of the body's core musculature, translating to increased power, balance, and functional movement ability including assessment of current strength and goal-specific program design to increase strength and muscular fitness.	Prerequisites: None.	L+L 2.0 4.0 4.0

PED118	Exercise is Medicine(r)	Group exercise that is individualized by highly trained fitness professionals to help meet personal health enhancement goals. Designed to follow the national initiative, "Exercise is Medicine(r)", coordinated by the American College of Sports Medicine (ACSM) and the American Medical Association (AMA) to help improve overall health and well-being. Designed for individuals over age 55.	Prerequisites: None.	L+L 1.5 3.0 3.0
PED120AA	Special Emphasis Activities: Aerobics	Intensive aerobic workout, including warm-up technique, cardiovascular endurance, muscle strength and endurance, stretching and body sculpturing.	Prerequisites: None.	L+L 2.0 4.0 4.0
PED120AF	Special Emphasis Activities: Weight Training	Intensive experience in weight training.	Prerequisites: None.	L+L 2.0 4.0 4.0
PED121	Physical Conditioning for Massage Therapists	Physical fitness necessary for current and prospective massage therapists. Includes physical fitness and workout techniques as related to performing massage therapy; individual conditioning strategies, and basic nutritional guidelines	Prerequisites: None.	L+L 1.0 2.0 2.0
PED124	Strength and Conditioning for Sport Performance: Basic	Introduction to the principles and training techniques of strength and conditioning for sport performance. Emphasis is placed on beginning instructional techniques and safety of Olympic lifts; plyometrics; muscular endurance, strength and power development; anaerobic and aerobic capacity.	Prerequisites: None.	L+L 2.0 4.0 4.0
PED125	Strength and Conditioning for Sport Performance: Intermediate	Principles and training techniques of strength and conditioning for sport performance. Emphasis is placed on instructional techniques and safety of Olympic lifts; plyometrics; muscular endurance, strength and power development; anaerobic and aerobic capacity.	Prerequisites: A grade of C or better in PED124.	L+L 2.0 4.0 4.0

PED126	Yoga Sampler	Yoga practice in multiple styles incorporating strength, breathing and for all skill levels.	Prerequisites: None.	L+L 1.5 3.0 3.0
PED126YA	Yoga Sampler	Yoga practice in multiple styles incorporating strength, breathing and for all skill levels.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED133	Olympic Style Weight Lifting	Advanced study of the science, strategy, and techniques of Olympic Style Weightlifting. For the fitness professional who is interested in competing, or is seeking to incorporate advanced strength and conditioning modalities. Addresses current topics, theories and techniques	Prerequisites: None.	L+L 2.0 4.0 4.0
PED150	Tradition and Practice of Yoga I	Introduction to the art and science of yoga. Explores the history and philosophy of yoga. Studies terms, concepts, issues, trends and health benefits of yoga. Examines teaching yoga as a career.	Prerequisites: None.	LEC 2.0 2.0 2.0
PED155	Tradition and Practice of Yoga II	Examination of the art and science of yoga. Explores the history and philosophy of yoga. In-depth review of significant literature associated with the yoga tradition. Examines cultural aspects of yoga, relevancy of yoga to modern day life and health benefits of yoga.	Prerequisites: A grade of C or better in PED150.	LEC 2.0 2.0 2.0
PED158	Tradition and Practice of Yoga III	A deep exploration of the yogic path as it relates to the self, to teaching yoga, and to society as a whole. Emphasis on the early and modern intellectual foundations of yoga.	Prerequisites: A grade of C or better in PED150 and PED155.	LEC 2.0 2.0 2.0
PED180	Methods of Teaching Pilates	Presents Pilates instruction techniques and their differences from other movement-based activities; application of anatomical knowledge and practice teaching experiences; assessment techniques, establishment of course goals, and organizing the classroom.	Prerequisites: None. PED101PS or PED102PS recommended but not required.	LEC 2.0 2.0 2.0

PED191	Corrective Exercise for Athletes: Basic	Evaluation of functional movement ability and corrective activity to improve specific functional movements. Optimize functional movement abilities by designing corrective activity to improve weaknesses, correct imbalances and asymmetries in order to contribute to athletic and fitness performance.	Prerequisites: None.	L+L 1.0 2.0 2.0
PED192	Corrective Exercise for Athletes: Intermediate	Evaluation of functional movement ability and corrective activity to improve functional movement at the intermediate level. Optimize functional movement abilities and dynamic sport movement by designing corrective activity at the intermediate level to improve weaknesses, correct imbalances and asymmetries in order to contribute to athletic and fitness performance.	Prerequisites: A grade of C or better in PED191 or permission of Instructor.	L+L 1.0 2.0 2.0
PED193	Corrective Exercise for Athletes: Basic	Evaluation of functional movement ability and corrective activity to improve specific functional movements. Optimize functional movement abilities by designing corrective activity to improve weaknesses, correct imbalances and asymmetries in order to contribute to athletic and fitness performance.	Prerequisites: None.	L+L 0.5 1.0 1.0
PED201BA	Baseball - Advanced	To improve upon intermediate skills and game strategy of baseball at the advanced level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201BB	Basketball - Advanced	To improve upon intermediate skills and game strategy of basketball at the advanced level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0

PED201BC	Boot Camp - Advanced	Vigorous training at an Advanced level incorporating cardiovascular, core fitness, strength training, and flexibility. Emphasis will be placed on proper body mechanics and safety.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201BD	Ballroom Dancing - Advanced	Advanced level instruction on ballroom dancing footwork, timing, techniques, and style. Partners rotate.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201CH	Cheerleaders - Advanced	Advanced skills of cheerleading with instruction, practice, and performance including proper body mechanics, choreography, and behavioral competencies.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201FB	Football - Advanced	Improve upon intermediate skills and game strategy of football at the advanced level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201GO	Golf - Advanced	Experienced golfers gain helpful hints and practice to improve their game.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201PC	Physical Conditioning - Advanced	Advanced level training program with access to free weights, strength machines and cardio equipment.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201SA	Salsa - Advanced	Learn the advanced dance moves for Salsa.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201SB	Softball - Advanced	Improve upon intermediate skills and game strategy of softball at the advanced level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201SO	Soccer - Advanced	To improve upon intermediate skills and game strategy of soccer at the advanced level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201ST	Strength Training - Advanced	Advanced techniques of strength training, concentrating on incorporating a vigorous exercise regimen for increasing muscle strength and endurance.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0

PED201SU	Scuba Diving: Advanced	Additional training in SCUBA techniques. Pool sessions and weekend open water dives will provide training in: Underwater Navigation, Underwater Naturalist, Deep Dive, and other specialties.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201SV	Scuba Diving/Fish Identification and Research	Special training in SCUBA diving to improve students' ability to appreciate the fish fauna (ichthyo-fauna) and learn basic techniques to quantify their observations.	Open Water SCUBA certification or equivalent (any SCUBA certification card from a nationally recognized agency).	L+L 1.0 2.0 2.0
PED201TC	Tai Chi - Advanced	Advanced level techniques of Tai Chi including moves, breathing and meditation.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201TD	Tap Dance - Advanced	Advanced Tap dance steps. Experience recommended	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201TE	Tennis - Advanced	Advanced level skills and strategy of tennis. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201TF	Track and Field - Advanced	Advanced level training in track and field events. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201VB	Volleyball - Advanced	Improve upon intermediate skills and game strategy of volleyball at the advanced level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201WT	Weight Training - Advanced	Advanced level training with a qualified instructor on the use of Olympic and Free Weights.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED201YH	Hatha Yoga - Advanced	Advanced Hatha Yoga postures which combine traditional and flow style yoga that utilizes breathing, yoga poses, relaxation and meditation to create balance and inner peace.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED201YI	Iyengar Yoga - Advanced	Advanced Hatha Yoga postures using various props such as belts, blocks, and straps used to focus on precise body alignment.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0

PED201YO	Yoga - Advanced	Advanced yoga postures.	Prerequisites: None. Prior experience recommended.	L+L 1.0 2.0 2.0
PED202	Physical Activities: Elite	Individual, dual, or team sports activities at the elite level.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202BA	Baseball - Elite	Improve upon advanced skills and game strategy of baseball at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202BB	Basketball - Elite	Improve upon advanced skills and game strategy of basketball at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202FB	Football - Elite	Improve upon advanced skills and game strategy of football at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202GO	Golf - Elite	Improve upon advanced skills and game strategy of golf at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202SB	Softball - Elite	Improve upon advanced skills and game strategy of softball at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202SO	Soccer - Elite	Improve upon advanced skills and game strategy of soccer at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202TE	Tennis - Elite	Improve upon advanced skills and game strategy of tennis at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202TF	Track and Field - Elite	Improve upon advanced skills and game strategy of track and field at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0
PED202VB	Volleyball - Elite	Improve upon advanced skills and game strategy of volleyball at the elite level. Class emphasis on competition and drills.	Prerequisites: None. Prior experience at competitive level recommended.	L+L 1.0 2.0 2.0

PED224	Strength and Conditioning for Sport Performance: Advanced	Principles and training techniques of strength and conditioning for sport performance. Emphasis placed on instructional techniques and safety of Olympic lifts; plyometrics; muscular endurance, strength and power development; anaerobic and aerobic capacity; and injury prevention.	Prerequisites: A grade of C or better in PED124 and PED125.	L+L 2.0 4.0 4.0
PED225	Strength and Conditioning for Sport Performance: Elite	Principles and training techniques of strength and conditioning for sport performance. Emphasis placed on instructional techniques and safety of Olympic lifts; plyometrics; muscular endurance, strength and power development; anaerobic and aerobic capacity; injury prevention; and assessment techniques.	Prerequisites: A grade of C or better in PED124, PED125 and PED224.	L+L 2.0 4.0 4.0
PED237	Physical Conditioning for Police Officers	Overview of all aspects of fitness for current and prospective police officers. Includes mental aspects of performance for optimal achievement on agility tests; physical fitness and workout techniques related to performing specific police department tasks; individual conditioning strategies, nutritional guidelines, and basic exercise principles. Emphasis on lifelong fitness and conditioning	Prerequisites: None.	L+L 3.0 3.0 3.0
PED270	Teaching Yoga: Level I	Methods of teaching yoga. Studies assessment techniques, establishing course goals, and organizing the classroom. Reviews yoga instruction techniques and how these differ from other movement-based activities; application of anatomical knowledge and practice teaching experiences.	Prerequisites: A grade of C or better in PED101YO or PED102YO or PED201YO.	L+L 2.0 2.0 2.0



PED271	Teaching Yoga: Level II	Emphasizes practice teaching experiences. Reviews instructional methods and techniques for assessing student skill levels, organizing the classroom and writing lesson plans; application of anatomical knowledge to build movement skills, improvement of observational skills and development of an individual teaching style	Prerequisites: A grade of C or better in PED270 or permission of Instructor.	L+L 2.0 2.0 2.0
PED272	Teaching Yoga: Alignments and Adjustments	Instructional methods for teaching more advanced asanas. Principles of alignment of back bending, inversion, forward bending and arm balancing asanas and techniques for identifying and correcting misalignments. Emphasis on instructional techniques that safely build yoga movement skills while encouraging progression in the practice of challenging asanas	Prerequisites: A grade of C or better in PED271 or permission of Instructor.	L+L 2.0 2.0 2.0
PED274	Teaching Yoga: Practicum	Guided, practical, in-class experience in teaching yoga students. Requires implementation of lesson plans, application of individual teaching techniques, demonstration of individual teaching style, and evaluation of teaching sessions	Prerequisites: A grade of C or better in PED270 and PED271.	L+L 1.0 3.0 3.0
PED280	Introduction to Yoga Therapy	Introduction to the therapeutic use of yoga. Includes basic concepts of yoga therapy, identification of common therapeutic problems and application of yoga asana as a modality of healing. Demonstration and practice of therapeutic techniques and sequences to improve movement and promote health and well-being.	Prerequisites: A grade of C or better in PED270 or permission of Instructor.	L+L 2.0 2.0 2.0

PED281	Yoga Therapy - Upper Body Principles	Basic concepts of yoga therapy, review of therapeutic interventions, identification of common therapeutic problems, and application of yoga asana as a modality of healing. Demonstration and practice of therapeutic techniques and sequences to improve movement capability and promote health and well-being of the upper body. Emphasis on the study of chronic problem areas and therapeutic issues with shoulders and upper body.	Prerequisites: A grade of C or better in PED280 or permission of Instructor.	L+L 2.0 2.0 2.0
PED282AA	Service-Learning Experience in Physical Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
PED282AB	Service-Learning Experience in Physical Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
PED282AC	Service-Learning Experience in Physical Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
PED283	Yoga Therapy - Low Back Principles	Basic concepts of yoga therapy, review of therapeutic interventions, identification of common therapeutic problems, and application of yoga asana as a modality of healing. Demonstration and practice of therapeutic techniques and sequences to improve movement capability and promote health and well-being. Emphasis on the study of chronic problem areas and therapeutic issues associated with the lower back.	Prerequisites: A grade of C or better in PED280 or permission of Instructor.	L+L 2.0 2.0 2.0

PED284	Yoga Therapy - Knee Principles	Basic concepts of yoga therapy, review of therapeutic interventions, identification of common therapeutic problems of the knee, and application of yoga asana as a modality of healing. Demonstration and practice of therapeutic techniques and sequences to improve movement capability and promote health and well-being. Emphasis on the study of chronic problem areas and therapeutic issues.	Prerequisites: A grade of C or better in PED280 or permission of Instructor.	L+L 2.0 2.0 2.0
PED287	Physical Education of the Atypical	Individualized activities programs for students with limited physical capacities.	Prerequisites: Permission of Instructor.	LEC 2.0 2.0 2.0
PED288	Yoga Therapy Practicum	Focus on immersion in the area of Yoga Therapy. Yoga Therapy application onsite at the community college with a current instructor of Yoga. Requires minimum of 150 contact hours.	Prerequisites: A grade of C or better in (PED280, PED281, PED283, and PED284) or permission of Program Director.	LAB 2.0 10.0 0.0
PED291	Corrective Exercise for Athletes: Advanced	Evaluation of functional movement ability and corrective activity to improve functional movement at an advanced level. Optimize functional movement abilities by designing advanced corrective activity to improve weaknesses, correct imbalances and asymmetries in order to contribute to athletic and fitness performance. Self-assessment at an advanced level of imbalances and selection of appropriate corrective exercises.	Prerequisites: A grade of C or better in PED192 or permission of Instructor.	L+L 1.0 2.0 2.0

PED296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PED296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
PED296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

PED296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PED298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PED298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

PED298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PFT101	Tools, Safety and Math	Orientation to the plumbing trade, apprentice responsibilities, and job safety. Cardiopulmonary resuscitation (CPR) and first aid. Materials and connections, care and use of tools. Mathematical problem solving and trade mathematics	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT101AA	Trade Safety	Orientation to the plumbing trade, apprentice responsibilities, and job safety. Cardiopulmonary resuscitation (CPR) and first aid	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT101AB	Trade Tools	Plumbing trade materials and connections. Care and use of tools	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT101AD	Trade Calculations	Trade calculations using whole numbers, decimals, fractions, percentages, discounts, slope, grade, volume, ratios, proportions, power and roots. Standard and metric methods of calculations. Blueprint dimensions. Trade specific calculations	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 2.0 2.0 2.0

PFT102	Basic Piping and Applications	Cast iron pipe, steel pipe, Durham system, and threading large pipe. Safety precautions and code requirements for installing fittings. Pipe connections, copper tubing, and plastics. Pipefitting, valves, and hangers used in the plumbing trade. Emphasis on hands-on training and the safe operation of pipe machines. Basic piping measurements and calculations. Shop training in pipe-threading procedures, soldering, and silver brazing techniques. Hazardous chemical safety	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT102AA	Basic Piping and Applications I	Cast iron pipe, steel pipe, Durham system, and threading large pipe. Safety precautions and code requirements for installing fittings	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT102AB	Basic Piping and Applications II	Pipe connections, copper tubing, and plastics. Pipefitting, valves, and hangers used in the plumbing trade. Emphasis on hands-on training and the safe operation of pipe machines. Basic piping measurements and calculations. Shop training in pipe-threading procedures, soldering, and silver brazing techniques. Hazardous chemical safety	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT102AC	Basic Piping and Applications III	Basic piping measurements and calculations. Shop training in pipe-threading procedures, soldering, and silver brazing techniques. Hazardous chemical safety	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT102AD	Basic Piping and Applications IV	Proper use, care, and maintenance of hand and powered threading and grooving equipment. Emphasis on hands-on training and the safe operation of pipe machines. Shop training in pipe-threading procedures: Cutting, reaming, threading, grooving, and assembly of pipe to proper specifications.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0

PFT103	Science, Rigging and Hoisting	Science and mechanics related to the plumbing trade. Properties of water and matter, hydraulic and pneumatic mechanics, metals and alloys. Corrosion. Rigging procedures including the use of fiber and wire rope for knots, hitches and slings. Use of hoisting equipment, and cranes. Hoisting with helicopters. Safe and proper loading and unloading of hoisting equipment. Intermediate fitting projects and mathematical applications	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 6.0 6.0 6.0
PFT103AA	Science and Mechanics	Science and mechanics related to the plumbing trade. Properties of water and matter, hydraulic and pneumatic mechanics, metals and alloys. Corrosion	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT103AB	Rigging and Cranes	Pipe Rigging procedures including the use of fiber and wire rope for knots, hitches and slings. Use of hoisting equipment and cranes	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT103AC	Hoisting and Intermediate Fitting Projects	Hoisting with helicopters. Safe and proper loading and unloading of hoisting equipment. Intermediate fitting projects and mathematical applications	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT103AD	Signal Person	Hand and voice signals used in crane operations in preparation for agency certification.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PFT104AA	Torch Cutting Fundamentals	Proper procedures for safe setup and use of oxy-acetylene torch and portable plasma cutting assemblies.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PFT104AB	Tube Bending	Proper methods, theory, calculations, and operation of bending tube. Review of Isometric drawing and related mathematics to bend around objects and solve angles.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0



PFT110	Drainage	Installation procedures for sewers and utilities. Draws, plumbing traps and drainage vents. Special drainage and safety requirements. Drain, waste and vent pipes. Vent systems and vent sizing. Installation and sizing of gas systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT112	HVAC I	Fundamentals of refrigeration and electricity. Refrigerants, basic evaporators/compressors, piping and expansion devices. Also alternating current systems, AC motors, overload protection and controllers. Testing and servicing of refrigeration equipment. Safety stressed	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0
PFT113	Isometric Drawing	Drafting skills and applied pipe drafting and isometric drawings. Selected drawings, building plans, and specifications. Isometric and non-isometric pipeline drawings. Mechanical plans for pipe layout systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT113AA	Isometric Drawing I	Drafting skills and applied pipe drafting and isometric drawings	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT113AB	Isometric Drawing II	Selected drawings, building plans, and specifications	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT113AC	Isometric Drawing III	Isometric and non-isometric pipeline drawings. Mechanical plans for pipe layout systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT114	Basic Pipefitting and Welding	Pipefitting and welding equipment and safety. Fabrication and installation of commercial and industrial piping systems. Principles of parallel line development. Pipe layout and welding techniques for specific types of joints and branches. Welding procedures for odd and even angled fittings. Tack-up, weld-out, and spool welding techniques. Oxy-acetylene and portable plasma cutting torch	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0

PFT114AA	Basic Pipefitting and Welding I	Pipefitting and welding equipment and safety. Fabrication and installation of commercial and industrial piping systems. Principles of parallel line development	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT114AB	Basic Pipefitting and Welding II	Pipe layout and welding techniques for specific types of joints and branches. Welding procedures for odd and even angled fittings	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT114AC	Basic Pipefitting and Welding III	Tack-up, weld-out, and spool welding techniques. Oxy-acetylene and portable plasma cutting torch	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT201	Drawing, Prints and Specifications	Reading and interpretation of blueprints, building specifications, schematics and technical and isometric drawings. Interpretation of building plans and isometric drawings. Pipe sizing and installation of materials.	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT201AA	Drawing, Prints and Specifications I	Reading and interpretation of blueprints, building specifications, and building plans. Includes architectural, mechanical, plumbing and electrical drawings	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT201AB	Drawing, Prints and Specifications II	Reading and interpretation of technical and specific drawings. Plumbing blueprints and drawings	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT201AC	Drawing, Prints and Specifications III	Reading and interpretation of section and isometric drawings. Pipe sizing and installation of materials	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT202	Chiller Diagnostics I	Maintenance, replacement and repair of complete refrigeration and air conditioning systems. Includes principles and procedures required in the start-up, test/balance of systems, the proper use of testing and measuring instruments. Automatic control systems, control action, electrical and control diagrams, and application of motor controllers.	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0

PFT203	Gas and Water Plumbing	Natural and Liquid Propane (LP) gas systems. Sizing and venting gas appliances and medical gas systems. Sizing of rain water systems. Installation of storm drains. Water distribution and treatment, water mains and services, hot water supply and water pipe sizing	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT203AA	Gas and Water Plumbing I	Natural and Liquid Propane (LP) gas systems. Sizing and venting gas appliances and medical gas systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT203AB	Gas and Water Plumbing II	Sizing of rain water systems. Installation of storm drains	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT203AC	Gas and Water Plumbing III	Water distribution and treatment. Water mains and services, hot water supply and water pipe sizing	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT204	Steam Systems and Basic Refrigeration	Theory and installation procedures for pumps and steam systems. Principles of refrigeration and air conditioning.	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	L+L 5.0 5.0 5.0
PFT205	HVAC II	Steam and hot water boilers; including the function and operation of parts and accessories, diagnosis of problems, and repairs. Boiler water testing and treatment. Principles of combustion and testing methods	Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0
PFT206	Fixtures, Service and Special Purpose Installations	Handling and installation of plumbing fixtures and appliances. Special purpose installations including swimming pools, fountains, sprinkler and vacuum systems, and solar water heaters. Service related work and human relation skills required for service work	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT206AA	Fixtures	Handling and installation of plumbing fixtures and appliances	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT206AB	Service Work	Service related work and human relation skills required for service work	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0

PFT206AC	Special Purpose Installations	Special purpose installations including swimming pools, fountains, sprinkler and vacuum systems, and solar water heaters	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT207	Pneumatic Controls	Study of pneumatic controls including their operation, application, installation, and servicing.	Prerequisites: Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0
PFT208	Uniform Plumbing Code	Advanced Uniform Plumbing Code (UPC) requirements and revisions	Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0
PFT209	Welding	Basic oxy-acetylene and arc welding with emphasis on shop training. Includes history and purpose of oxy-acetylene, welding equipment and use. Safe welding practices. Application of the four essentials of arc welding. Weld types and related use in the field	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0
PFT209AA	Welding I	Basic oxy-acetylene and arc welding with emphasis on shop training. Includes history and purpose of oxy-acetylene, welding equipment and use. Safe welding practices	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT209AB	Welding II	Application of the four essentials of arc welding. Weld types and related use in the field	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT209AC	Welding III	Weld types and related use in the field	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT210	HVAC III	Compressor function, operation, and construction with emphasis on the maintenance, repair, and overhaul procedures for reciprocating compressors	Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0
PFT211	Steam and Hydronic Controls	Properties of saturated steam and steam heating systems. Steam traps, steam piping, and heat transfer equipment. Low-pressure and high-pressure steam boilers and control systems. Steam generating plants. Hydronic heating, cooling, and systems installation and operation	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 6.0 6.0 6.0

PFT211AA	Steam and Hydronic Controls I	Properties of saturated steam and steam heating systems. Steam traps and steam piping	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT211AB	Steam and Hydronic Controls II	Heat transfer equipment. Low-pressure and high-pressure steam boilers and control systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT211AC	Steam and Hydronic Controls III	Steam generating plants. Hydronic heating, cooling, and systems installation and operation	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
PFT212	Steamfitters and Plumbers Journeyman Examination Review, Application and Supervision	Review, application and satisfactory score on journeyman "check out" exam. Supervisory techniques, economies, unionism, production, obligations, attitudes and procedures of journeymen	Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0
PFT213	Pipefitters-Refrigeration Journeyman Examination Review, Application and Customer Relations	Review, application and successful completion of the pipefitter-refrigeration journeyman "check out" exam. Includes service techniques for improving customer relations	Registered apprentice status or permission of the apprenticeship coordinator.	L+L 6.0 6.0 6.0
PFT214	Gas Tungsten Arc Welding	Fundamentals of Gas Tungsten Arc Weld (GTAW). Equipment and GTAW preparation. Joint welds, shielding gas, and characteristics of tungsten electrodes. Guided bend testing and quality weld inspection. Safe work practices	Registered Apprentice with the Phoenix Pipefitting Trades Joint Apprenticeship Training Committee or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
PFT273	Cross-Connection Control	Purpose and scope of cross-connections. Theory and devices for the prevention of backflow. Disassembly and testing procedures of backflow preventers.	Registered apprentice with the Arizona Pipe Trades Joint Apprenticeship Trust or permission of the Apprenticeship Coordinator.	LEC 2.0 2.0 2.0

PFT280	Medical Gas Installer Certification	Federal, state, and local regulations for medical gas and vacuum systems. Notification process and concepts related to medical gas installation. Product performance, installation requirements, and operating principles. Methods of testing and documentation and recording of test results. Field installation. Level Systems 1, 2, 3, and 4 as associated with facility and equipment requirements.	Registered apprentice with the Arizona Pipe Trades Joint Apprenticeship Trust or permission of the Apprenticeship Coordinator.	LEC 2.0 2.0 2.0
PFT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PFT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

PFT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
PFT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PFT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

PFT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
PFT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PGR120AA	Elements of Agency Management: Coping with Stress	Overview of stress, responses to stress, and the management of stressful situations and symptoms. Emphasis on Stress related to large, highly structured work settings	Prerequisites: None.	LEC 1.0 1.0 1.0
PGR120AC	Elements of Agency Management: Cultural Awareness	Cultural factors that effect attitudes, beliefs, values, and behaviors when communicating and interacting with social service agency clients	Prerequisites: None.	LEC 1.0 1.0 1.0
PGR121	Employee Development: Time and Money Management	Techniques for managing time and money. Establishing short and long-term goals for personal financial management and time management	Prerequisites: None.	LEC 1.0 1.0 1.0



PGR122	Employee Development: Effective Communication	Techniques for effective business communications. Includes outlining, summarizing and report writing. Also covers active listening techniques and common barriers to the listening process	Prerequisites: None.	LEC 1.0 1.0 1.0
PGR123	Employee Development: Performance Management	Overview of employee development. Includes performance management, interpersonal relationship behaviors, and personality styles	Prerequisites: None.	LEC 2.0 2.0 2.0
PGR124	Employee Development: Creativity Strategies	Overview of creativity in employee development. Covers stages of thinking, idea stimulation strategies, and brainstorming as well as innovation strategies and style indicator	Prerequisites: None.	LEC 1.0 1.0 1.0
PGR125	Employee Development: Planning	Overview of individual development plan. Includes preparation of an action plan and setting goals. Emphasis on the role of an employee and supervisor	Prerequisites: None.	LEC 1.0 1.0 1.0
PGR126	Employee Development: Teambuilding and Meetings	Overview of teambuilding and meetings. Includes effective techniques and stages of teambuilding. Also covers procedures for meeting facilitation	Prerequisites: None.	LEC 1.0 1.0 1.0
PHC101	Pharmacology for Pharmacy Technicians	Overall history of pharmacy from ancient times to today; pharmacy technician job ethics and responsibilities; state and national drug laws and regulations; pharmacy information reference material; pharmaceutical abbreviations and introduction to prescription sig codes.	Prerequisites: Health and safety documents.	60
PHC102	Pharmacy Tech I	Technical aspects of prescription dispensing and drug distribution in the retail and hospital setting utilizing the computer. Bulk compounding, packaging, inventory control, drug storage and a variety of drug delivery systems. Laws that relate to specific technical tasks.	Prerequisites: PHC101 or with Program Manager approval.	120

PHC102AB	Pharmacy Tech II	Responsibilities of a pharmacy technician specific to working in a hospital and community setting; common drugs and their uses; drug routes of administration; basic biopharmaceutics; billing and reimbursement; sterile and non-sterile compounding; pharmacy career development; introduction to resume building, job search training.	Prerequisites: PHC102 or with Program Manager approval.	128
PHC107	Math and Dosages	Principles of household, metric and apothecary measurements, medical symbols and abbreviations. Emphasizes drug dose unit calculations and drug pricing.	Prerequisites: PHC102AB or with Program Manager approval.	90
PHC114	Pharmacy Tech Externship	This course will give students hands-on experience with patients, staff, and other pharmacy professionals while using their skills and techniques they obtain from the pharmacy program coursework. Students are assigned to the site of an approved pharmacy partner. This will prepare the student for the transition from school to industry, to gain valuable work experience, and to provide an opportunity to network in the workforce.	Prerequisites: PHC102AB, PHC107, PHC122, or with Program Manager approval.	200
PHC122	Pharmacy Tech Certification Review	Pharmacy Technician Certification Board Exam. Preparation for the professional practice national examinations. Basic study and test taking skills.	Prerequisites: PHC107 or with Program Manager approval.	18
PHI101	Introduction to Philosophy	General consideration of human nature and the nature of the universe. Knowledge, perception, freedom and determinism, and the existence of God	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI102	Introduction to Philosophy	General consideration of human nature and the nature of the universe. Dealing with similar subjects in more depth and with more sophistication	Prerequisites: A grade of C or better in PHI101 or permission of Instructor.	LEC 3.0 3.0 3.0

PHI103	Introduction to Logic	Informal logic, logical fallacies, elementary symbolic logic, analysis of argument forms, and construction of proofs for validity	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
PHI104	World Philosophy	Examination of questions such as the meaning of life and death, social justice, appearance and reality, human nature, the identity of the self freedom and destiny, the ethical life, and the relationship of science and religion. Comparative analysis of diverse Eastern and Western viewpoints	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI105	Introduction to Ethics	A survey of ethical theory in Western Philosophy, including the major normative theories and selected metaethical theories.	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI106	Critical Thinking and Problem-Solving	Commonly used informal fallacies; examination of emotive and unclear uses of language, including sexism and loaded terms; and methods for analyzing extended arguments. Application to news media, advertising, political speeches, and textbooks.	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
PHI113	Introduction to Mathematical Logic	Basic information in semantics and syntax of sentential and predicate logic, construction of truth trees and derivations in natural deductive systems	Prerequisites: A grade of C or better in PHI103 or permission of Instructor.	LEC 3.0 3.0 3.0
PHI201	History of Ancient Philosophy	Historical survey of the intellectual history of the Greco-Roman world, focusing on the philosophical tradition and social/historical context	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI212	Contemporary Moral Issues	Philosophical consideration of such moral issues as civil disobedience, preferential treatment, abortion, privacy, sexual morality, and poverty and hunger	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI213	Medical and Bio-Ethics	A philosophical consideration of moral problems that arise in relation to medicine and biology, e.g., death, patient's rights and biological experimentation	Prerequisites: None.	LEC 3.0 3.0 3.0

PHI214	Business Ethics	Philosophical consideration of moral problems arising in business practice, including corporate responsibility, government regulation, hiring practices, and advertising. Application to both the United States and other countries	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
PHI215	Legal Ethics	Philosophical considerations of moral problems encountered in the law and the legal system by legal professionals and other involved parties	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI216	Environmental Ethics	Philosophical consideration of diverse theories and perspectives on the environment, and application of these theories to global moral issues such as animal rights, preservation of wilderness and species, population, world hunger and poverty, and air and water pollution.	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI218	Philosophy of Sexuality	Philosophical examination of sexuality in human life. Historical and critical survey of philosophical and theological views. Comparison and evaluation of contemporary theories about the nature of sexual desire and sexual acts. Implications of theories for contemporary moral problems.	Prerequisites: A grade of C or better in ENG101 or ENG107 or permission of Instructor.	LEC 3.0 3.0 3.0
PHI224	Political Philosophy	Predominant figures and theories in Euroamerican political philosophy from Plato to contemporary social/political philosophers.	Prerequisites: A grade of C or better in ENG101, or ENG107, or permission of Instructor.	LEC 3.0 3.0 3.0
PHI233AA	Metaphysics: An Introduction	Metaphysical issues which have concerned philosophers from the time of the ancient Greeks until the present; topics selected from the following: the nature and function of metaphysics, reality, universals, space, time and the infinity, rational theology, the nature of the mind, causation and the nature of things	Prerequisites: A grade of C or better in PHI101 or permission of Instructor.	LEC 3.0 3.0 3.0

PHI233AB	Theory of Knowledge	Epistemological issues which have concerned philosophers from the time of the ancient Greeks until the present. Topics selected from the following: the technical terminology of epistemology, the nature of knowledge, knowledge of past events, knowledge of other minds, and knowledge of physical objects	Prerequisites: A grade of C or better in PHI101 or permission of Instructor.	LEC 3.0 3.0 3.0
PHI233AC	Philosophical Psychology	Philosophical principles and tools used in analyzing the nature of the mind	Prerequisites: A grade of C or better in PHI101 or permission of Instructor.	LEC 3.0 3.0 3.0
PHI234AA	Plato	The ideas of Plato and Socrates and their impact on western thought	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI244	Philosophy of Religion	Religious language, the existence of God, miracles, and human destiny	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI245	Introduction to Eastern Philosophy	Fundamental theories of Indian and Chinese metaphysics, epistemology, ethics and aesthetics	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI250	Ethics in Higher Education	Philosophical consideration of and diverse perspectives on moral problems that arise in higher education, including academic freedom, hiring practices, diversity, sexual harassment, community responsibilities, stewardship of public trust, intellectual property, and other related issues	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI251	Philosophy of Sport	General consideration of sport in its philosophical dimensions. Possible topics include the Zen of sport, strategy and competition, sport, practice, and play, and cheating versus fair play	Prerequisites: None.	LEC 3.0 3.0 3.0
PHI282AA	Service Learning Experience in Philosophy	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in PHI101 or permission of Instructor.	LAB 1.0 1.0 0.0
PHI282AB	Service Learning Experience in Philosophy	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in PHI101 or permission of Instructor.	LAB 2.0 2.0 0.0

PHI282AC	Service Learning Experience in Philosophy	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in PHI101 or permission of Instructor.	LAB 3.0 3.0 0.0
PHI296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify) or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PHI296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
PHI296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

PHI296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PHI298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PHI298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

PHI298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PHS110	Fundamentals of Physical Science	Survey of the principles of physics and chemistry.	Prerequisites: A grade of C or better in MAT090 or higher level mathematics course or eligibility for MAT120 or higher as indicated by appropriate placement.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHS115	The Science of Musical Instruments	A science class set in a musical context where students learn about music, musical instruments, and about the underlying scientific and mathematical principles of sound.	Prerequisites: A grade of C or better in MAT090, or higher level mathematics course, or eligibility for MAT120 or higher as indicated by appropriate placement.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHS120	Introduction to Physical Science: Astronomy, Meteorology, Geology and Oceanography	Designed primarily for students with limited background in physical science and mathematics and for nonscience majors. Topics from astronomy, meteorology, geology and oceanography. A laboratory course designed to help the students learn the basic laws and facts of the physical sciences which provide the starting points for scientific thought and speculations.	Prerequisites: None.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0



PHS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PHS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
PHS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

PHS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PHS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PHS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

PHS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PHT104	Pharmacology for Pharmacy Technicians	Overview of pharmacology for pharmacy technicians. Includes drug conversion factors and dosage calculations as well as disease states and biopharmaceutics	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
PHT109	Drug Actions and Effects	Drug names, dosage forms, indications, routes of administration and side effects of drugs. Basic anatomy and functions of body systems relevant to most commonly prescribed drugs	Prerequisites: None.	LEC 3.0 3.0 3.0
PHT120	Pharmacy Technician Responsibilities	Responsibilities and skills of pharmacy technicians. Emphasis on federal and state laws, prescription entry and fulfillment, drug regulations, and drug calculations, as well as pharmaceutical products, abbreviations, and terminology. Includes inventory management, administration routes, financial issues, and pharmacy environments	Prerequisites: None.	LEC 3.0 3.0 3.0

PHT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PHT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
PHT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

PHT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PHT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PHT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

PHT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PHY090	Preparation for Introduction to Physics	A developmental course designed to review basic math and physics principles for students deficient or insecure in these areas. Stresses individualized instruction and "hands-on" experience. Serves to prepare the student for PHY101 or PHS110	Prerequisites: None.	LEC 1.0 1.0 1.0
PHY101	Introduction to Physics	A survey of physics emphasizing applications of physics to modern life.	Prerequisites: A grade of C or better in MAT090 or higher level mathematics course or eligibility for MAT120 or higher as indicated by appropriate placement.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHY101AA	Introduction to Physics	A survey of physics emphasizing applications of physics to modern life.	Prerequisites: A grade of C or better in MAT090 or higher level mathematics course or eligibility for MAT120 or higher as indicated by appropriate placement.	LEC 5.0 4.0 4.0 LAB 0.0 3.0 3.0
PHY111	General Physics I	Includes motion, energy, and properties of matter.	Prerequisites: A grade of C or better in MAT182 or MAT187 or MAT220 or MAT221 or eligibility for MAT220 as indicated by appropriate placement or one year high school Trigonometry with a grade of C or better or permission of Department or Division.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

PHY111AA	General Physics I	Includes motion, energy, and properties of matter.	Prerequisites: A grade of C or better in MAT182 or MAT187 or MAT220 or MAT221 or eligibility for MAT220 as indicated by appropriate placement or one year high school Trigonometry with a grade of C or better or permission of Department or Division.	LEC 5.0 4.0 4.0 LAB 0.0 3.0 3.0
PHY112	General Physics II	Includes electricity, electromagnetism, and modern physics.	Prerequisites: A grade of C or better in PHY111.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHY115	University Physics I	General physics course using calculus to develop the principles of mechanics and thermodynamics. Recommended for majors in the sciences and mathematics. Required for Engineering majors.	Prerequisites: A grade of C or better in MAT220 or MAT221 or permission of Department or Division. Corequisites: MAT230 or MAT231. One year of High School physics or PHY111 and PHY112 is strongly recommended.	LEC 5.0 4.0 4.0 LAB 0.0 3.0 3.0
PHY116	University Physics II	Principles of electricity, magnetism, waves, and optics. Required for Engineering majors.	A grade of C or better required in all Prerequisites. Prerequisites: (MAT230 or MAT231) and PHY115. Prerequisite or Corequisites: MAT240 or MAT241 or permission of Instructor.	LEC 5.0 4.0 4.0 LAB 0.0 3.0 3.0
PHY118	Explorations in Science Teaching	General overview of the profession of the science educator with a look at student, teachers, curricula, and classroom techniques. Includes discussion of theory, pedagogy, and practice of teaching physical science. Available curricula will be reviewed for their alignment with the state and national standards. Includes guided practice with designing and teaching inquiry-based science lessons for K-12 classrooms.	Prerequisites: None.	L+L 1.0 2.0 2.0

PHY121	University Physics I: Mechanics	Kinematics, Newton's laws, work, energy, momentum, conservation laws, dynamics of particles, solids, fluids, mechanical waves, and sound.	Prerequisites: A grade of C or better in MAT220 or MAT221 or permission of Department or Division. One year of High School physics or PHY111 and PHY112 suggested but not required.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHY131	University Physics II: Electricity and Magnetism	Electric charge and current, electric and magnetic fields in vacuum and in materials, and induction. AC circuits, displacement current, and electromagnetic waves.	Prerequisites: A grade of C or better in MAT230 or MAT231 or permission of Department or Division and PHY121. Corequisites: MAT241 or permission of Department or Division.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHY195AA	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in PHY121 or permission of Instructor.	L+L 1.0 2.0 2.0
PHY195AB	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in PHY121 or permission of Instructor.	L+L 2.0 4.0 4.0



PHY195AC	Principles and Practice of Scientific Research	Students will learn the use of the scientific method; how, why and where research is conducted; the ethical protocol in the scientific process; how peer review works, and how to formulate scientifically testable hypotheses and design supporting experiments. Students will apply the scientific method in laboratory and/or field research projects, will learn and use appropriate laboratory techniques, and will communicate research design, data collection, and data interpretation in conventional scientific formats.	Prerequisites: A grade of C or better in PHY121 or permission of Instructor.	L+L 3.0 6.0 6.0
PHY241	University Physics III: Thermodynamics, Optics, and Wave Phenomena	Heat, entropy, and laws of thermodynamics; wave propagation; geometrical and physical optics; introduction to special relativity.	Prerequisites: A grade of C or better in PHY116 or PHY131 or permission of Instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHY282AA	Service-Learning Experience in Physical Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
PHY282AB	Service-Learning Experience in Physical Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
PHY282AC	Service-Learning Experience in Physical Science	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
PHY285	Introduction to Astrodynamics	Introduction to celestial mechanics and the dynamics of spacecraft navigation. Introduction to rocket propulsion and spacecraft design. Orbital and interplanetary celestial mechanics and maneuvers. Astrophysics and characteristics of the space environment. Lab is project-based, utilizing a real-time spacecraft simulation environment.	Prerequisites: A grade of C or better in ENG101 and (PHY115 or PHY121).	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PHY294	Special Topics in Physics	Conceptual, experimental, and computational aspects of a special topic in physics.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0

PHY294AA	Special Topics in Physics	Conceptual, experimental, and computational aspects of a special topic in physics.	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
PHY294AB	Special Topics in Physics	Conceptual, experimental, and computational aspects of a special topic in physics.	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
PHY294AC	Special Topics in Physics	Conceptual, experimental, and computational aspects of a special topic in physics.	Prerequisites: Permission of Department or Division.	LEC 0.5 0.5 0.5
PHY296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PHY296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

PHY296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
PHY296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PHY298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

PHY298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
PHY298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PIM115	Beginning Pima Conversation I	Conversational Pima. Basic sentence structure, pronunciation, and vocabulary necessary to develop speaking ability in Pima. Designed to develop speaking and listening abilities, with little emphasis on grammar	Prerequisites: None.	LEC 3.0 3.0 3.0
PIM116	Beginning Pima Conversation II	Reviews basic Pima vocabulary, pronunciation, and sentence structure. Designed to develop speaking, listening, and writing skills in O'Odham for effective communication in Pima.	Prerequisites: A grade of C or better in NAV201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
PLB109	Phlebotomy: Basic Skills	Theory and practice of basic phlebotomy including laboratory test codes, equipment, and procedures.	Prerequisites: (Acceptance into the Laboratory Assisting or Medical Assisting or Phlebotomy program), (a grade of C or better in HCC130 and HCC145AA), and permission of Program Director.	L+L 2.0 4.0 4.0

PLB110	Practicum: Fundamental Phlebotomy Skills	Application of fundamental phlebotomy techniques in a clinical laboratory setting or health care environment.	Prerequisites: A grade of C or better in PLB109 and submit to a drug screening and demonstrate negative results and acceptance into the Medical Assisting or Phlebotomy program or permission of Program Director.	LAB 0.5 3.0 0.0
PLB110AA	Practicum: Basic Phlebotomy: Training for Law Enforcement Officers	Application of basic phlebotomy techniques in a clinical laboratory setting or health care environment for law enforcement purposes.	Prerequisites: Certified Law Enforcement Officer or permission of Program Director. Corequisites: PLB109.	LAB 2.0 6.0 0.0
PLB111	Specimen Processing and Advanced Techniques in Phlebotomy Procedures	Theory and practice of advanced techniques in phlebotomy and specimen processing including laboratory test codes, equipment, and procedures.	Prerequisites: A grade of C or better in PLB109 and permission of Program Director.	L+L 2.0 4.0 4.0
PLB112	Practicum: Specialized Phlebotomy Techniques	Application of specialized phlebotomy techniques in a clinical laboratory setting or health-care environment.	Prerequisites: A grade of C or better in PLB109 and PLB110. Corequisites: PLB111 and PLB121, or permission of Program Director.	LAB 0.5 3.0 0.0
PLB114	Refresher Course for Phlebotomists	Review of phlebotomy theory and practices including equipment, procedures, and special considerations. Reinforces and updates basic skills and competencies of phlebotomy techniques for individuals who have not worked in the field for between 6 months and 24 months and for those who have completed a formal structured phlebotomy training program but have not worked in the field.	Prerequisites: (Must provide proof of 2 years employment as a phlebotomist within the last 4 years or completion of a formal structured phlebotomy training program within the last 2 years with proof of a minimum of 100 successful venipunctures) and permission of Program Director.	L+L 1.0 1.0 1.0
PLB115	Developmental Skills for Law Enforcement Phlebotomy	Provides an update for specific law enforcement phlebotomy. Includes phlebotomy theory and practices including equipment, procedures, and special considerations of phlebotomy techniques.	Prerequisites: Permission of Program Director.	L+L 1.0 1.0 1.0
PLB121	Practicum: Basic Specimen Processing	Application of specimen processing techniques in a clinical laboratory setting or health care environment.	Prerequisites: A grade of C or better in PLB109 and PLB110. Corequisites: PLB111 and PLB112 or permission of Program Director.	LAB 2.0 8.0 0.0

PLB122	Practicum: Phlebotomy and Specimen Processing	Application of phlebotomy and specimen processing techniques in a clinical laboratory setting or health care environment.	Prerequisites: A grade of C or better in PLB109 or permission of Program Director. Prerequisites: A grade of C or better in PLB111 or Corequisites: PLB111 or permission of Program Director.	LAB 3.0 12.0 0.0
PLB250	Phlebotomy Program Review	Provides review of phlebotomy theory fundamental knowledge, and advanced concepts required for phlebotomy national certification examinations. Topics include anatomy and physiology, specimen collection, specimen processing and handling, non-blood specimens, and laboratory operations related to phlebotomy.	Prerequisites: (A grade of C or better in PLB122 or current employment with a minimum of one (1) year experience as a phlebotomist) and permission of Program Director.	LEC 1.0 1.0 1.0
PLB280	Quality Assurance for Phlebotomy	Components, tests, and procedures for evaluation of phlebotomy to assure consistency in the collection, processing, and analysis process.	Prerequisites: Current employment in a law enforcement agency with a minimum of one (1) year of experience as a law enforcement phlebotomist or permission of Instructor.	LEC 3.0 3.0 3.0
PLC109	Phlebotomy Basic Skills	Theory and practice of basic phlebotomy including laboratory test codes, equipment, and procedures.	Prerequisites: Admission into the Phlebotomy program.	90
PLC111	Specimen Processing and Advanced Techniques in Phlebotomy	Theory and practice of advanced techniques in phlebotomy and specimen processing including laboratory test codes, equipment, and procedures.	Prerequisites: PLC109 or with Program Manager approval.	90
PLC122	Phlebotomy Practicum	Application of phlebotomy and specimen processing techniques in a clinical laboratory setting or health care environment.	Prerequisites: PLC111 or with Program Manager approval.	160

PLG124	Plumbing: Pipes and Fittings	This course introduces the various types of plumbing materials, pipe schedules and material properties, and applications of piping. Trainees will learn how to determine the appropriate types of fittings, valves, hangers, and supports needed for piping jobs. Trainees will learn to properly measure, cut, prep, and join piping.	Prerequisites: None.	81
PLG125	Plumbing: Fixtures	This course introduces commonly used fixtures in plumbing systems. Students will select and operate each type of fixture for a variety of installations. The course provides an overview of plumbing system installation, maintenance and water heating systems.	Prerequisites: None.	61
PLG126	Plumbing: Drain, Waste, and Vent	This course addresses drainage, waste movement and ventilation for construction application. Course provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system.	Prerequisites: None.	81
PLG127	Plumbing: Water Distribution Systems	This course discusses the processes through which potable water is distributed. Students will learn to identify the components and functions of a water distribution system and explain the relationships among the components. The course also includes installation and testing of water distribution systems.	Prerequisites: None.	61
PLG224	Plumbing: Pipe Systems and Controls	This course covers applied calculations to determine size, types and service of pipe systems. Course also includes the application of drawings, codes, and specifications for assembly and installation of gas, air, and water systems.	Prerequisites: None.	81

PLG225	Plumbing: Water Disposal Systems	Course covers water disposal and drainage systems, to include the types, components, functions, codes, safety, design, installation and repair.	Prerequisites: None.	102
PLG226	Plumbing: Fixtures and Appliances	Course covers the safety, codes, installation, maintenance, and repair of appliances, fixtures, and gas piping.	Prerequisites: None.	81
PLG227	Plumbing: Water Resource Solutions	Course introduces water supply disinfection, filtration systems, and sustainable water practices.	Prerequisites: None.	40
PME190	Introduction to ECG Rhythm Analysis and Interpretation for EMS Professionals	Designed to provide an overview of the anatomy and physiology of the cardiovascular system and electrophysiology of the cardiac conduction system for Emergency Medical Service (EMS) professionals. Basic electrocardiograph (ECG) multi-lead acquisition, analysis, and interpretation of various dysrhythmias and cardiovascular conditions.	Prerequisites: None.	LEC 3.0 3.0 3.0
PME191	Introduction to Pharmacology for EMS Professionals	Designed to provide an overview of the principles of pharmacology and pharmacologic agents utilized in patient management plans. Includes pharmacokinetics, pharmacodynamics, physiology of pharmacology, calculating drug dosages, and drug profiles.	Prerequisites: None.	LEC 3.0 3.0 3.0
PME201	Advanced Cardiac Life Support (ACLS) Initial Provider in Paramedicine	Designed to provide the knowledge and skills needed to recognize and manage cardiopulmonary arrest, acute dysrhythmia, stroke, and acute coronary syndromes according to current emergency cardiovascular care (ECC) guidelines. Integrates knowledge of basic electrocardiographic rhythm interpretation, pharmacologic agents, and other interventions used in advanced cardiac life support.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 2.0 2.0



PME202	Pediatric Advanced Life Support (PALS) Initial Provider in Paramedicine	Designed to provide the knowledge and skills needed to recognize and manage an infant, child or adolescent in respiratory compromise, circulatory compromise, or cardiopulmonary arrest according to current Pediatric Advanced Life Support (PALS) and emergency cardiovascular care (ECC) guidelines. Integrates knowledge of basic electrocardiographic rhythm interpretation, pharmacologic agents, and other interventions used in pediatric emergencies.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 1.5 1.5
PME203	Pediatric Emergencies for Prehospital Professionals (PEPP) Initial Provider in Paramedicine	Designed to provide the knowledge and skills needed to recognize and manage an infant, child or adolescent in respiratory compromise, circulatory compromise, or cardiopulmonary arrest according to current Pediatric Emergencies for Prehospital Professionals (PEPP) and emergency cardiovascular care (ECC) guidelines. Integrates knowledge of basic electrocardiographic rhythm interpretation, pharmacologic agents, and other interventions used in pediatric emergencies.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 1.5 1.5
PME204	Neonatal Resuscitation Provider (NRP) in Paramedicine	Designed to provide the knowledge and skills needed to recognize and manage a neonate with respiratory compromise, circulatory compromise, or cardiopulmonary arrest according to current American Academy of Pediatrics (AAP) and emergency cardiovascular care (ECC) guidelines. Integrates knowledge of basic electrocardiographic rhythm interpretation, pharmacologic agents, and other interventions used in neonatal resuscitation.	Prerequisites: Admission into the Paramedic Education Program.	L+L 0.5 1.5 1.5

PME205	Advanced Medical Life Support (AMLS) Initial Provider in Paramedicine	Designed to provide the knowledge and skills needed to recognize and manage various medical conditions according to the National Association of EMTs (NAEMT) Advanced Medical Life Support (AMLS) guidelines. Skills are sequenced and synthesized into simulations.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 1.5 1.5
PME206	International Trauma Life Support (ITLS) Provider/Pre-Hospital Trauma Life Support (PHTLS)	Designed to provide the knowledge and skills needed to recognize and manage various trauma conditions and environmental injuries according to the International Trauma Life Support (ITLS) or Provider/ Pre-Hospital Trauma Life Support (PHTLS) guidelines. Skills are sequenced and synthesized into simulations.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 1.5 1.5
PME211	Advanced Cardiac Life Support (ACLS) Refresher	Designed to meet Advanced Cardiac Life Support (ACLS) refresher requirements for the healthcare provider who initiates, directs, or participates in the management of cardiopulmonary arrest and other cardiovascular emergencies according to current cardiopulmonary resuscitation and emergency cardiovascular care guidelines. Provides the healthcare provider with the knowledge and skills needed to recognize and manage cardiopulmonary arrest, acute dysrhythmia, stroke, and acute coronary syndromes according to current emergency cardiovascular care (ECC) guidelines. Integrates knowledge of basic electrocardiographic rhythm interpretation, pharmacologic agents, and other interventions used in advanced cardiac life support.	Prerequisites: None.	L+L 0.5 1.0 1.0

PME212	Pediatric Advanced Life Support (PALS) Refresher	Designed to meet Pediatric Advanced Life Support (PALS) refresher requirements for the healthcare provider who initiates, directs, or participates in the management of an infant, child or adolescent in respiratory compromise, circulatory compromise, or cardiopulmonary arrest according to current emergency cardiovascular care (ECC) guidelines. Integrates knowledge of basic electrocardiographic rhythm interpretation, pharmacologic agents, and other interventions used in pediatric emergencies.	Prerequisites: None.	L+L 0.5 1.0 1.0
PME213	Pediatric Emergencies for Prehospital Professionals (PEPP) Refresher	Designed to meet Pediatric Emergencies for Prehospital Professions (PEPP) refresher requirements for the healthcare provider who initiates, directs, or participates in the management of an infant, child or adolescent in respiratory compromise, circulatory compromise, or cardiopulmonary arrest according to current PEPP and emergency cardiovascular care (ECC) guidelines. Integrates knowledge of basic electrocardiographic rhythm interpretation, pharmacologic agents, and other interventions used in pediatric emergencies.	Prerequisites: None.	L+L 0.5 1.0 1.0
PME215	Advanced Medical Life Support (AMLS) Refresher	Designed to meet the National Association of EMTs (NAEMT) Advanced Medical Life Support (AMLS) refresher requirements for the healthcare provider who performs assessment and management of the most common medical crises in patients. Skills are sequenced and synthesized into simulations.	Prerequisites: None.	L+L 0.5 1.0 1.0

PME216	International Trauma Life Support (ITLS)/Pre-Hospital Trauma Life Support (PHTLS) Refresher	Designed to meet International Trauma Life Support (ITLS) or Pre-Hospital Trauma Life Support (PHTLS) refresher requirements for the healthcare provider who performs assessment and management of various trauma conditions and environmental injuries. Skills are sequenced and synthesized into simulations.	Prerequisites: None.	L+L 0.5 1.0 1.0
PME221	Basic Level and Advanced Level Skills Course for the EMS Instructor and Examiner	Designed to provide an overview of the roles and responsibilities of basic level and advanced level instructors and examiners. Includes instructional strategies and methodologies, methods of evaluation, documentation of skill competency, and management strategies of emergency medical services (EMS) programmatic, state, and national scope of practice basic level and advanced level skills stations.	Prerequisites: None.	LEC 2.0 2.0 2.0
PME222	Advanced Cardiac Life Support (ACLS) Instructor Preparation	Designed to prepare Advanced Cardiac Life Support (ACLS) instructor candidates to deliver American Heart Association (AHA) instructor-led and blended learning courses. Provides an overview of the roles and responsibilities of the ACLS instructor. Includes instructional considerations, methods of evaluation, documentation of ACLS student skill competency, and ACLS Course management according to AHA guidelines.	Prerequisites: None.	LEC 2.0 2.0 2.0

PME223	Pediatric Advanced Life Support (PALS) Instructor Preparation	Designed to prepare Pediatric Advanced Life Support (PALS) instructor candidates to deliver American Heart Association (AHA) instructor-led and blended learning courses. Provides an overview of the roles and responsibilities of the PALS instructor. Includes instructional considerations, methods of evaluation, documentation of PALS student skill competency, and PALS Course management according to AHA guidelines.	Prerequisites: None.	LEC 2.0 2.0 2.0
PME240	Pharmacology in Paramedicine	Designed to provide an overview of the pathophysiologic principles of pharmacology, pharmacologic agents in the Paramedic scope of practice, and the practice of medication administration. Develops psychomotor skills in the paramedic scope of practice through sequenced lab simulations. Prepares students to integrate comprehensive knowledge of the pathophysiologic principles of pharmacology and pharmacologic agents to formulate a differential diagnosis and to implement a management plan for medical emergencies and trauma.	Prerequisites: Admission into the Paramedic Education Program.	L+L 3.0 5.0 5.0

PME245	Airway and Ventilatory Management in Paramedicine	Designed to prepare students to integrate knowledge of the respiratory system, comprehensive assessment practices, and pharmacologic agents to formulate a differential diagnosis and implement airway and ventilatory management plans for medical emergencies and trauma. Develops psychomotor skills in the paramedic scope of practice through sequenced lab simulations. Prepares students to perform comprehensive assessment and techniques in the paramedic scope of practice for assuring airway patency, adequate mechanical ventilation, and respiration for all age groups.	Prerequisites: Admission into the Paramedic Education Program.	L+L 3.0 4.0 4.0
PME250	Comprehensive Patient Assessment in Paramedicine	Designed to provide an overview of comprehensive patient assessment. Develops psychomotor skills in the paramedic scope of practice. Integrates the pathophysiological significance of comprehensive assessment findings to formulate a differential diagnosis and implement a management plan for medical emergencies and trauma.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 3.0 3.0
PME251	Medical Emergencies in Paramedicine I	Designed to provide an overview of pathophysiologic principles, epidemiology, comprehensive assessment, differential diagnosis, and pharmacology for respiratory and cardiovascular emergencies. Develops psychomotor skills in the paramedic scope of practice through sequenced lab simulations. Prepares students to implement a management plan in the Paramedic scope of practice for respiratory and cardiovascular emergencies.	Prerequisites: Admission into the Paramedic Education Program.	L+L 4.0 8.0 8.0

PME252	Medical Emergencies in Paramedicine II	Designed to provide an overview of pathophysiologic principles, epidemiology, comprehensive assessment, differential diagnosis, and pharmacology for various medical emergencies. Develops psychomotor skills in the paramedic scope of practice through sequenced lab simulations. Prepares students to implement a management plan in the Paramedic scope of practice for various medical emergencies.	Prerequisites: Admission into the Paramedic Education Program.	L+L 4.0 6.0 6.0
PME253	Medical Emergencies in Paramedicine III	Designed to provide an overview of pathophysiologic principles, epidemiology, comprehensive assessment, differential diagnosis, and pharmacology for various medical conditions. Develops psychomotor skills in the paramedic scope of practice through sequenced lab simulations. Prepares students to implement a management plan in the Paramedic scope of practice for gynecologic, obstetric, pediatric, and geriatric emergencies, neonatal care, and patients with special challenges.	Prerequisites: Admission into the Paramedic Education Program.	L+L 4.0 4.0 4.0
PME254	Technical Operations in Paramedicine	Designed to provide an overview of transport operations, incident management, multi-casualty incidents, extrication, special rescue, hazardous materials incidents, terrorism incidents, and disaster response. Examines the Paramedic's operational roles and responsibilities.	Prerequisites: Admission into the Paramedic Education Program.	L+L 2.5 3.0 3.0

PME260	Trauma Patient Management in Paramedicine	Designed to provide an overview of pathophysiologic principles, epidemiology, comprehensive assessment, differential diagnosis, and pharmacology for various trauma conditions. Develops psychomotor skills in the paramedic scope of practice through sequenced lab simulations. Prepares students to implement a management plan in the Paramedic scope of practice for hemorrhage, soft tissue trauma, burns, face and neck trauma, head and spine trauma, chest trauma, abdominal and genitourinary trauma, orthopedic trauma, and environmental emergencies.	Prerequisites: Admission into the Paramedic Education Program.	L+L 2.0 2.0 2.0
PME270	Immersive Total Patient Management Experience (ITPME)	Designed to provide immersive-simulated live patient interactive out-of-hospital scenarios. This course creates an environment which facilitates incident stress inoculation and interdisciplinary collaboration.	Prerequisites: Admission into the Paramedic Education Program.	L+L 2.0 2.0 2.0
PME280	Preparation for Paramedicine Practicum	Designed to provide an overview of Emergency Medical Service (EMS) systems, safety and wellness, resiliency, health, medical/legal and ethical issues, EMS communications, documentation, and crime scene awareness. Examines the Paramedic's roles and responsibilities to assure personal, patient, and public health and safety in the provision of professional emergency care.	Prerequisites: Admission into the Paramedic Education Program.	LEC 1.0 1.0 1.0



PME281	Paramedicine Clinical Practicum: Comprehensive	Designed as the precepted Paramedicine clinical practicum in which the student synthesizes standard of care and scope of practice with comprehensive assessment and diagnostic technology, patient advocacy, ethical and professional behaviors, critical thinking, decision-making, and patient management of medical emergencies and trauma in a clinical setting.	Prerequisites: Admission into the Paramedic Education Program.	L+L 2.0 15.0 15.0
PME281AA	Paramedicine Clinical Practicum: Phase I	Designed as the precepted Paramedicine clinical practicum in which the student synthesizes standard of care and scope of practice with comprehensive assessment and diagnostic technology, patient advocacy, ethical and professional behaviors, critical thinking, decision-making, and patient management of medical emergencies and trauma in a clinical setting.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 7.5 7.5
PME281AB	Paramedicine Clinical Practicum: Phase II	Designed as the precepted Paramedicine clinical practicum in which the student synthesizes standard of care and scope of practice with comprehensive assessment and diagnostic technology, patient advocacy, ethical and professional behaviors, critical thinking, decision-making, and patient management of medical emergencies and trauma in a clinical setting.	Prerequisites: Admission into the Paramedic Education Program.	L+L 1.0 7.5 7.5

PME288	Paramedicine Comprehensive Field Internship Practicum	Designed as the precepted Paramedicine field internship in which the student synthesizes standard of care and scope of practice with comprehensive assessment and diagnostic technology, patient advocacy, ethical and professional behavior, critical thinking, decision-making, and patient management of medical emergencies and trauma in the out-of-hospital setting.	Prerequisites: Admission into the Paramedic Education Program.	L+L 5.0 34.0 34.0
PME289	Preparation for Paramedic National Credentialing	Designed to provide preparation for the national cognitive and psychomotor examinations, and other credentials required for national and state Paramedic certification/licensure.	Prerequisites: Admission into the Paramedic Education Program.	L+L 2.0 3.0 3.0
PME290	Advanced Life Support (ALS) Refresher	Designed to provide a refresher of Advanced Life Support (ALS) to meet national and Arizona Department of Health Services Bureau of Emergency Services and Trauma System (AzDHS/BEMSTS) requirements for Paramedicine recertification.	Prerequisites: None.	L+L 1.0 1.0 1.0
PME291	Community Health Paramedicine	Designed as the capstone Community Health Paramedicine experience in which the student synthesizes standard of care and expanded scope of practice with comprehensive assessment, diagnostic technology, patient advocacy, ethical and professional behaviors, to practice patient-centered evidence-based paramedicine in the community setting.	Prerequisites: None.	L+L 8.0 11.0 11.0

PME292	Critical Care Paramedicine	Designed as the capstone Critical Care Paramedicine experience in which the student synthesizes standard of care and expanded scope of practice with comprehensive assessment, diagnostic technology, patient advocacy, ethical and professional behaviors, to practice patient-centered evidence based paramedicine in the clinical, out-of-hospital, and inter-facility transport settings.	Prerequisites: None.	L+L 8.0 11.0 11.0
PME293	Tactical Emergency Casualty Care (TECC)	Designed to provide strategies, skills, and simulations to decrease preventable death in the prehospital unstable environment according to National Association of EMTs (NAEMT) and Tactical Emergency Casualty Care (TECC) guidelines. Strategies include integration of rapid patient assessment with trauma patient management in tactical and hazardous environments. Promotes a common approach for the transition of rescue to patient care while limiting the risk of further casualties. Examines the impact of tactical and environmental factors on trauma patient management.	Prerequisites: None.	L+L 2.5 2.5 2.5
PME298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

PME298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
PME298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PMP120	Massage Therapy Basics	A massage basics course covering: sanitation, hygiene, safety, contraindications, ethics, healthy therapeutic relationships, professional communication, overview of the human body (integumentary, muscular, and skeletal systems), healthcare terminology, muscle theory, client care, self-care, and Swedish massage.	Prerequisites: Admission into the Massage Therapy program.	175

PMP121	Massage Therapy Advanced	Advanced anatomy and massage, focusing in greater detail on the skeletal and muscular components and manipulations of the body. Students are taught all the bones and muscles of the body and introduced to the kinesiology that develops from their interactions. Deep tissue, Thai massage, and reflexology are introduced. Recently learned skills will be practiced on the public during clinic with coaching.	Prerequisites: PMP120 or Program Manager's permission.	175
PMP220	Massage Therapy Mastery I	An advanced anatomy and massage course focusing in detail on the skeletal and muscular components and manipulations of the upper body. Students will review the bones and muscles of the upper body and the kinesiology that develops from their interactions. Corresponding deep-tissue massage for the upper body is taught in conjunction with the advanced anatomy to ensure its practical application. Integration of deep tissue, Thai massage, myofascial, and structural massage are emphasized. Subjective, objective, assessment, and plan (S.O.A.P.) notes are introduced. The course concludes with two weeks of supervised clinic with coaching.	Prerequisites: PMP121 or Program Manager's permission.	175

PMP221	Massage Therapy Mastery II	<p>An advanced anatomy and massage course focusing in detail on the skeletal and muscular components and manipulations of the lower body. Students will review all of the bones and muscles of the lower body and the kinesiology that develops from their interactions. Corresponding deep-tissue massage for the lower body is taught in conjunction with the advanced anatomy to ensure its practical application. Students combine all of their program skills, integrating anatomy, kinesiology, concepts, theories, and techniques to properly assess clients and apply critical thinking in tailoring treatments to individuals with documentation. Clients with unique needs are covered such as athletes, expecting mothers, infants, older adults, obese individuals, people with disabilities, and end of life care. Persons with common injuries and conditions are also covered, teaching specific strategies and protocols to address them.</p> <p>Entrepreneurial skills conducive to the industry of massage therapy will continue to be reinforced while an exit plan is created for the student's entrance into the industry. The course concludes with two weeks of supervised clinic with coaching to gain practical experience working on the general public and applying the assessment/treatment approaches focused on in the course.</p>	Prerequisites: PMP220 or Program Manager's permission.	175
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PNT101	Introduction to Painting-Decorating Trade	Orientation to the trade, apprentice responsibilities and professionalism, communication skills and workplace behavior. Tools and equipment used in the trade. Preparation and application procedures of various types of surfaces, utilizing various types of materials used in the trade.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 4.0 4.0 4.0
PNT102	Surface Preparation and Cleaning	Overview of surface preparation and cleaning, emphasis on materials, coating applications, various surface finishes, and safety procedures. Causes of paint failures and remedies. Also preparation procedures of plaster drywall, masonry and metal. Residential and commercial applications.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 4.0 4.0 4.0
PNT103	Color Mixing/Wood Finishing	Nature and effects of color, preparation of colors and color matching procedures and techniques. Includes wood finishing techniques with a study of woods and wood products	Prerequisites: A grade of C or better in PNT102.	LEC 4.0 4.0 4.0
PNT104	Wood and Decorative Finishes	Wood and decorative finishing techniques including glazing, antiquing, wood graining and marbelizing. Sanding techniques of hardwoods and softwoods including fillers, sealers, stains and finishes.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PNT105	Painting and Drywalling Orientation	Overview of the painting and drywalling labor history, workplace performance, green construction, work place issues and sexual harassment.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
PNT106	Health and Safety for Drywall Finishers	Purpose and limitation of Material Safety Data Sheet (MSDS). Occupational Safety and Health Administration (OSHA). Common safety and fall hazards. Requirements for erecting and dismantling scaffolds.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0

PNT107	Introduction to the Drywall Trade	Basic terminology and tools used in the drywall trade. Exhibiting professionalism in the trade in appearance, dealing with difficult customers, following workplace protocol and procedure.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PNT108	Materials of the Drywall Trade	Characteristics of drywall panels, types of fillers and proper lighting requirements. Surface preparation, ventilation and materials handling.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PNT109	Tools of the Drywall Trade	Selection, use, maintenance and safety procedures for common tools of the drywall trade.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PNT118	OSHA Standards and Regulations	Provisions of and implementation of Occupational Safety and Health Administration (OSHA) Act in the work place. Rights and responsibilities under the OSHA Act. Appeals process, record keeping, and voluntary protection programs. OSHA's construction and general industry standards. Overview of the requirements of the more frequently referenced standards.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 1.5 1.5 1.5
PNT120	Basic Calculations for Construction	Addition, subtraction, multiplication and division of whole, decimal, fraction and metric numbers. Percentage and fraction conversions. Metric units of length, weight, volume and temperature. Metric system as it relates to the construction trade. Basic algebra and geometry operations and equations. Area and volume calculations of shapes.	Prerequisites: None.	L+L 1.5 1.5 1.5
PNT121	Introduction to Hand and Power Tools	Overview of the use, maintenance and safety procedures for common hand and power tools.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
PNT123	Introduction to Blueprints	Basic concepts of blueprints, including terms and symbols, grid line systems and blueprint production techniques. Dimensions and blueprint reading	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0



PNT150	Construction Foreman	Examine the basic supervisory and leadership concepts and skills needed to manage a construction project. Includes basic theories of motivation, role of communications in construction project management, decision making process, planning and organizing, strategies, developing production schedules to control production, discussing accident prevention and loss control	Prerequisites: None.	LEC 2.0 2.0 2.0
PNT201	Coverings and Blasting	Application, installation, and estimating procedures for wallcoverings including abrasive and wet blasting guidelines and systems.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PNT202	Spray Painting	Operating and maintenance procedures for spray painting equipment and materials. Use of specialized painting systems and equipment. Application procedures for special coatings and parking lots.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
PNT203	Non-Spray Application of Coatings	Best practices in the application of stain, clear coat, and wood finish application on wood substrates.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
PNT205	Paints, Coatings and Materials	Coating products and solvent type and compatibility following Product Data Sheet and Material Safety Data Sheet for products. Including common failures, causes and corrections, weatherization, properties and functions of paints or coatings.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
PNT208	Filling, Taping and Sanding Applications	Characteristics of fillers, filling compounds, drying times. Taping techniques including taping and wiping procedures, tools and equipment. Functions and operations of boxes and fasteners as well as sanding application and bead and trim installation.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 4.0 4.0 4.0
PNT209	Automatic Taping Tools of the Drywall Trade	Inspection and maintenance procedures for keeping automatic taping tools in proper working condition.	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0

PNT210	Advanced Drywall Applications and Systems	Methods for making repairs, mixing procedures, and recognizing common defects in drywall finishing and wallboards. General texture spraying techniques and basics of Exterior Insulated and Finish Systems (EIFS) and Expanded Polystyrene (EPS).	Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 3.0 3.0 3.0
PNT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PNT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

PNT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
PNT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PNT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

PNT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
PNT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PON105	Surgical Technology for the Operating Room Nurse	Direct observation of principles and culture of operating room. Traffic patterns, aseptic techniques, roles, professional surgical team work, case management, perioperative record, instrument handling, safety precautions with regard to exposure, surgical attire, surgical regimen and chain of command.	Acceptance into the Surgical Technology for the Operating Room Nurse Program, or permission of Department or Division.	L+L 2.0 2.0 2.0
PON210	PeriOperative Principles I	Role and responsibilities of the professional nurse in the perioperative setting. Team concepts, patient care, nursing process and impact of quality assurance. Role of Association of Operating Room Nurse Standards of Practice.	Prerequisites: Acceptance into the Surgical Technology for the Operating Room Nurse program or permission of Department or Division. Corequisites: PON214.	LEC 3.0 3.0 3.0

PON212	PeriOperative Principles II	Common pathogenic organisms and methods of sanitation/sterilization. Instruments, procedures intervention measures related to the operating room. State and Federal regulating agencies. Moral and ethical issues.	Prerequisites: A grade of C or better in PON210 or permission of Department or Division. Corequisites: PON214.	LEC 3.0 3.0 3.0
PON214	PeriOperative Laboratory	Practical application of perioperative nursing. Aseptic technique. Scrubbing, gowning, gloving, instrumentation, and maintenance of a sterile field. Accountability emphasized.	Prerequisites: Acceptance into the Surgical Technology for Operating Room Nurse Program. Corequisites: PON210 and PON212.	LAB 4.0 9.5 9.5
PON218	PeriOperative Clinical Practice I	Application of the nursing process in care of surgical patients during the perioperative period. Statements of competency established by the Association of Operating Room Nurses.	Prerequisites: A grade of C or better in PON214.	LAB 3.0 15.0 0.0
PON220	PeriOperative Clinical Practice II	Application of the nursing process in care of surgical patients during the perioperative period. Statements of competency established by the Association of Operating Room Nurses.	Prerequisites: A grade of C or better in PON214 or permission of Department or Division.	LAB 3.0 15.0 0.0
PON230	Surgical Technology Materials Update	Current surgical technology materials. Surgical specialty modifications, introductions, technology. Specific uses, handling, application to surgical procedures.	Prerequisites: Currently enrolled in Surgical Technology or Surgical Technology for the Operating Room Nurse program, or Certified Surgical Technologist, or permission of Program Director.	LEC 2.0 2.0 2.0 LAB 1.0 3.0 3.0

PON296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
PON296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
PON296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

PON296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
PON298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PON298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

PON298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
POR101	Elementary Portuguese I	Basic grammar, pronunciation, and vocabulary of the Portuguese language. Includes study of Lusophone culture. Practice in listening, speaking, reading, and writing skills	Prerequisites: None.	L+L 5.0 6.0 6.0
POR102	Elementary Portuguese II	Continued study of basic grammar, pronunciation, and vocabulary of the Portuguese language. Includes study of Lusophone cultures and practice in listening, speaking, reading and writing skills	Prerequisites: A grade of C or better in POR101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 5.0 6.0 6.0
POR201	Intermediate Portuguese I	Review of essential grammar of the Portuguese language and study of the Portuguese cultures. A continued practice and development of reading, writing, and speaking skills. Emphasis on both fluency and accuracy in the spoken language.	Prerequisites: A grade of C or better in POR102 or permission of the Department or Division. Completion of prerequisites within the last three years is required.	LEC 5.0 6.0 5.7



POR296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
POR296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
POR296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

POR296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
POR298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
POR298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

POR298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
POS100	Introduction to Political Science	Introduction to the discipline of political science and its relation to other disciplines with emphasis on the major philosophies and institutions of government.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS101	Current Issues	Introduction to current issues in politics, economics, social relations, foreign affairs. Presentations by local, state and national civic and cultural leaders.	Prerequisites: None.	LEC 1.0 1.0 1.0
POS110	American National Government	Study of the historical backgrounds, governing principles, and institutions, of the national government of the United States	Prerequisites: None.	LEC 3.0 3.0 3.0
POS113	United States and Arizona Social Studies	Overview of government, history, and geography of the United States and Arizona. Includes the relationship of government to the United States economic system as well as the influences and developments that have shaped U.S. and Arizona history. Also covers geographical systems, regions, and study techniques.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS114	World Social Studies	Introduction to the world from the integrated social science perspectives of history, geography, and government.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS115	Issues in American Politics	Examination of major issues in current affairs in the fields of politics, economics, social relations, foreign affairs, aesthetics, and others through the reading and viewing of secondary information sources	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0

POS120	World Politics	Introduction to the principles and issues relating to the study of international relations. Evaluation of the political, economic, national, and transnational rationale for international interactions	Prerequisites: None.	LEC 3.0 3.0 3.0
POS125	Issues in World Politics	Contemporary issues and factors in international relations. Stress conditions in civil order, trade, and international institutions.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS130	State and Local Government	Survey of state and local government in the United States. Special attention on Arizona State government.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS140	Comparative Government	Overview and evaluation of the sub-field of comparative politics. Covers various national governments from around the world: their structure, system, method of governance. Examines methods of assessing these governments	Prerequisites: None.	LEC 3.0 3.0 3.0
POS180	United Nations Studies	Historical origins, structural makeup, political and operational characteristics, and legal activities of the United Nations. Analysis of the overall institution's ongoing utility, productivity and creativity.	Prerequisites: None.	L+L 3.0 3.0 3.0
POS210	Political Ideologies	Leading political ideas and belief systems, e.g., Marxism, liberalism, conservatism, theories of democracy, and alternative futures.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS212	Political Dynamics in Contemporary Muslim Countries	An examination of contemporary governing structures and use of religion in governance in selected Muslim countries	Prerequisites: None.	LEC 3.0 3.0 3.0
POS220	U.S. and Arizona Constitution	Examination of the United States Constitution and the constitution and government of the State of Arizona	Prerequisites: None.	LEC 3.0 3.0 3.0
POS221	Arizona Constitution	Examination of the Constitution of the State of Arizona. Equivalent to the second part of POS220. May not enroll in POS220 and POS221 concurrently	Prerequisites: None.	LEC 1.0 1.0 1.0

POS222	U.S. Constitution	Examination of the United States Constitution. Equivalent to the first part of POS220. May not enroll in POS220 and POS222 concurrently	Prerequisites: None.	LEC 2.0 2.0 2.0
POS223	Civil Rights and Liberties	The historic background and current status of major civil rights and civil liberties issues in the United States.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS230	Public Policy and Civic Engagement: Cesar Chavez Legacy	Exploration of democratic citizenship in a multicultural society. Focus on the role of the activist in public policy service, community organizing, and social change strategies such as communication, social movement theory perspectives, and how leaders maintain movement momentum. Interpretation of the vision, philosophy, and work of Cesar E. Chavez; and accomplishments by citizens (individually and collectively) in social change and opposition. Special emphasis on community engagement participation.	Prerequisites: None.	L+L 3.0 3.0 3.0
POS270	American Legal System	Introduction to the political nature of the American legal system. Examination of the role of law in a pluralistic society, the structure and function of courts, the roles of major participants in the legal systems (e.g., judges, lawyers, litigants, juries, and interest groups). In-depth examination of critical issues in both civil and criminal law. Examination of courts at the state and federal level and trial and appellate level.	Prerequisites: None.	LEC 3.0 3.0 3.0
POS281AB	Public Policy/Service Internship	Field experience in community service, public policy or public service.	Prerequisites: Minimum of 15 credit hours at college granting internship with minimum GPA of 3.0 and permission of Instructor.	LAB 3.0 3.0 0.0
POS282AA	Volunteerism for Political Science: A Service Learning Experience	Service-learning field experience within government agencies, political organizations, citizen advocacy groups, and human service organizations/agency.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0

POS282AB	Volunteerism for Political Science: A Service Learning Experience	Service-learning field experience within government agencies, political organizations, citizen advocacy groups, and human service organizations/agency.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
POS282AC	Volunteerism for Political Science: A Service Learning Experience	Service-learning field experience within government agencies, political organizations, citizen advocacy groups, and human service organizations/agency.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
POS285	Political Issues and Public Policy	Introduction to public policy, how policy is made, and how public policy decisions are affected.	Prerequisites: None.	L+L 3.0 3.0 3.0
POS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
POS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

POS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
POS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
POS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

POS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
POS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PPT101	Hand and Power Tools	Identification and use of hand and hand-held power tools used in a power plant. Tool construction and purpose. Maintenance of hand and power tools	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT102	Introduction to Electricity	Basic electrical terminology and concepts. Fundamentals of electrical theory. Calculations using electrical laws. Voltage and current production. Battery construction and applications. Principles of magnetism. Operation of motors, transformers, and generators. Electrical safety	Prerequisites: None.	LEC 3.0 3.0 3.0



PPT103	Print Reading and Plant Drawings	Introduction to print reading and plant drawings. Flow diagrams and symbols on drawings. Dimension, tolerance and clearance on drawings. Amendments to drawings. Specific types of drawings. Proper procedures when using plant drawings	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT104	Properties of Materials	Basic properties of solids, liquids and gases. Basic properties and classifications of metals. Hazards of mixing different materials. Causes, effects and prevention of corrosion. Correct storage and handling of materials	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT105	Air Compressor Principles	Air compressor terminology. Principles of gas behavior and inter-cooling. Internal and external factors affecting compressor operation. Operating principles, components, preventive and corrective maintenance procedures. Compressor troubleshooting procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT106	Diesel Engine Systems	Diesel operating principles and diesel engine systems. Practical knowledge of safety precautions, inspection and maintenance of diesel engines	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT107	Lubrication	Principles, properties, and safe handling requirements of lubricants. Lubrication of bearings, lubrication systems, and system components. Oil settling systems. Construction, operation, and maintenance of oil purifiers	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT108	Turbines	Operations, steam properties, energy transfer, parts, and types of turbines. Components and function. Turbine maintenance for oil and hydraulic systems, inspection of casings, nozzles and rotors. Turbine alignment and the tightening of joints using appropriate tools and equipment	Prerequisites: None.	LEC 1.0 1.0 1.0

PPT109	Pipefitting Auxiliaries I	Principles of operation, maintenance procedures and inspection procedures. Basic piping systems, fittings, joints, and assorted piping materials	Prerequisites: None.	LEC 2.0 2.0 2.0
PPT110	Valve Maintenance I	Safety, terminology, components, and operating principles of valves. Inspection and rework of valves. Components of the valve packing chamber. Packing and safety procedures. Stem packing installation. Quality assurance test methods for specific valves	Prerequisites: None.	LEC 2.0 2.0 2.0
PPT111	Electrical Safety for Non Electrical Personnel	Electrical safety, accidental injury prevention and management. Electrical equipment and work place hazards. Scope of work and equipment design and prevention. Safe work practices and power tools. Power sources and electrical hazards in the power block. Distribution, switchgear, loadcenters, motor control centers, and breaker positions. Transformers, exposed lines and exposed energized equipment	Registered apprentice status or permission of apprenticeship coordinator.	LEC 0.5 0.5 0.5
PPT112	Principles of Machining	Safety practices, machining methods, and principles of material removal. Types of cutting tools, lathe, milling, drill, and bandsaw components. Principles of operation of specific machines found in the machine shop including turning, milling, drilling and cutting machines	Prerequisites: None.	LEC 3.0 3.0 3.0
PPT113	Pumps I	Types of pumps, applications and principles of operation and safety. Pump components identification. Inspection, use and maintenance of packing and mechanical seals	Prerequisites: None.	LEC 2.0 2.0 2.0

PPT114	Drive and Gear Components	Terminology, identification and inspection of the component parts of a drive and gear system. Operation, maintenance and inspection of couplings, clutches, brakes, belt drives, chain drives, shafts and gears. Operation and configurations of variable speed drives	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT115	Hydraulics and Pneumatics	Hydraulic and pneumatic safety, physical concepts, and fluid laws. Hydraulic and pneumatic system components and operation. Troubleshooting procedures of hydraulic and pneumatic systems	Prerequisites: None.	LEC 2.0 2.0 2.0
PPT116	Introduction to Welding and Metal Fabrication	Principles of metallurgy and material identification. Technical theory and basic skill training in oxyacetylene and shielded metal arc welding. Welding equipment safety and weld joints methods	Prerequisites: None.	LEC 3.0 3.0 3.0
PPT117	Forklift Operations	Safe and proper operation of forklift. Parts and function of forklift, principles of operation, and safety precautions. Inspection procedures, proper care, and industry standards. On-hands operation of a forklift	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT118	Conduct of Maintenance	Safety and management expectations. Defense in Depth strategy and Conduct of Verifications. Maintenance procedures. Work control process. Performance of work standards and documentation including pre-job preparation, pre-job notification, job review, job verification and job close out specific to nuclear power plant operations	Prerequisites: None.	LEC 1.0 1.0 1.0

PPT119	Instrument Air Compressor Maintenance	Purpose, function, and identification of system drawings. Identification of major components. Instrument air compressor components and function. Air flow operations. Free air unloader components and function. Fluids and flow paths. Compressor cooling water and lubricating oil. Inspection and repair of parts. Troubleshooting	Prerequisites: None.	LEC 2.0 2.0 2.0
PPT120	Energy Industry Fundamentals	Various types of energy and their conversion to useable energy such as electrical power. How generated electrical power is transmitted and distributed to the point of use.	Prerequisites: None.	LEC 3.0 3.0 3.0
PPT121	Power Plant Components	Theory, construction and application of basic power plant mechanical components. Basic concepts of electrical fundamentals and electronics discussed.	Prerequisites: None.	L+L 3.0 3.0 3.0
PPT122	Conduct of Operations	Introduction to the controlling codes, standards, and regulations that are used in the nuclear industry including 10 Code of Federal Regulations (CFR), American National Standards Institute (ANSI), and other applicable standards. Course also includes introduction to Human Performance Tools, Conduct of Shift Operations, Housekeeping, and Log-keeping.	Prerequisites: A grade of C or better in PPT202 and PPT203.	LEC 1.0 1.0 1.0

PPT124	Power Systems Components I	Principles, properties, and safe handling requirements of lubricants. Lubrication of bearings, lubrication systems, and system components. Oil settling systems. Construction, operation, and maintenance of oil purifiers. Terminology, identification and inspection of the component parts of a drive and gear system. Application, inspection, maintenance, and failure modes of plant bearings. Design and operation of sliding and anti-friction bearings and seals.	Prerequisites: None.	L+L 3.0 3.0 3.0
PPT126	Power Systems Components II	Functional components of turbines, including parts, steam properties and maintenance of oil and hydraulic systems. Heat exchanger theory, including types, operations, and maintenance of heat transfer systems. Operational principles of pneumatic and hydraulic valve actuators, including modulation control terminology and inspection testing.	Prerequisites: None.	L+L 3.0 3.0 3.0
PPT128	Power Systems Components III	Hydraulic and pneumatic safety, physical concepts, and fluid laws. Hydraulic and pneumatic system components and operation. Troubleshooting procedures of hydraulic and pneumatic systems. Mechanical component types and characteristics, common failure mechanisms, and operating principles of plant components.	Prerequisites: None.	L+L 3.0 3.0 3.0
PPT170	Instrumentation and Process Control	Principles and practices of instrumentation and process control systems used in industry. Topics cover the proper installation, troubleshooting, repair, and maintenance of various industrial process instrumentation (temperature, pressure, level, flow, etc.) and control circuits.	Prerequisites: A grade of C or better in college-level math course, or appropriate District placement, or permission of Department/Division Chair.	LEC 3.0 3.0 3.0

PPT200	Industry Events	Information distribution; methods and avenues of communication. Material and design problems in the nuclear power plant. Procedural deficiencies of motor and equipment operation. Operation of sensitive equipment. Potential plant vulnerabilities. Personnel errors including mis-positioning, flooding, testing and procedural violations	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT202	Power Plant Systems I	Components and function of reactor coolant, volume control, safety injection, and nuclear sampling systems. Function and operation of main steam and turbine systems, main and auxiliary feedwater systems, pressurizer, control rod drive, and recirculation systems. Operation and function of steam and heater drain systems. Reactor plant safety concepts.	Prerequisites: A grade of C or better in PPT120 and PPT121, or permission of Program Director.	LEC 3.0 3.0 3.0
PPT203	Power Plant Systems II	Advanced plant systems. Water, electrical and cooling systems. Safe shutdown cooling water system. Waste drain system. Fuel handling and storage systems. Fuel pool cooling and cleanup. Purpose and operation of radioactive waste management. Service air and gas systems. Ventilation and fire protection systems. Containment, Containment Spray, Emergency Core Cooling, Emergency Power, Environmental Monitoring, Off-gas, Post-accident, Radiation Monitoring, Residual Heat Removal, and Suppression Pool systems.	Prerequisites: A grade of C or better in PPT120 and PPT121, or permission of Program Director.	LEC 3.0 3.0 3.0
PPT204	Measuring and Test Equipment	Administrative controls for precision measurement. Use of precision measuring equipment. Emphasis on proper use, accurate reading, and calculations using precision measuring devices	Prerequisites: None.	LEC 1.0 1.0 1.0

PPT205	Rigging	Safe and proper operation of lifting equipment. Weight calculations. Identification and proper location of rigging equipment. Hand signals and industry standards. Safe rigging practices. Inspection and maintenance procedures. Operation of pendant cranes	Prerequisites: None.	LEC 2.0 2.0 2.0
PPT206	Bearings	Application, inspection and maintenance of plant bearings. Design and operation of sliding and anti-friction bearings. Function, design and applications of bearing seals. Reasons for bearing failure and related preventative maintenance procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT207	Heat Exchangers	Heat exchanger theory including heat transfer and operating principles. Classification of heat exchangers including types, construction, and operation. Inspection of heat exchangers. Cleaning of exchanger tubes and shells. Cleaning of component parts. Troubleshooting tubes. Maintenance of exchangers	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT208	Thermal Insulation	Principles of heat transfer and insulation. Types and temperature ranges for insulation. Safe and proper handling of insulation materials. Practical experience in removing and installing insulation	Prerequisites: None.	LEC 0.5 0.5 0.5
PPT209	Pipefitting Auxiliaries II	Purpose, terminology and system stress factors related to piping systems. Principles of fluid flow, and piping inspection procedures. Fabrication and installation of tubing materials, specific joints, and flanges. Basic piping system component maintenance, rework and installation procedures	Prerequisites: A grade of C or better in PPT109.	LEC 2.0 2.0 2.0

PPT210	Valve Maintenance II	Fundamentals of hand lapping. Dexter and Unislip resurfacing tools. Valve packing: purpose, components and specifications. Valve survey data sheet. Procedure for field manufacture of die-formed packing rings. Function of the Optical Flat. Valve inspection. Gaskets and torquing techniques.	Prerequisites: None.	LEC 3.0 3.0 3.0
PPT211	Couplings	Types, functions, and specific applications of couplings. Coupling removal and inspection procedures. Coupling rework and installation	Prerequisites: None.	LEC 0.5 0.5 0.5
PPT212	Control Valves and Actuators	Modulating control terminology. Disassembly, inspection and assembly processes. Construction and operation of specific actuators. Maintenance of pneumatic and hydraulic valve actuators. Principles of operation, inspection and testing of control valves. Bench testing	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT213	Pumps II	Rotary, reciprocating and centrifugal pump operation. Positive displacement and metering pump operation. Diaphragm pulsafeder operation. Disassembly, inspection and reassembly of radially and axially split centrifugal pumps. Troubleshooting and lab safety	Prerequisites: None.	LEC 3.0 3.0 3.0
PPT214	Machine Alignment	Calculations and practical lab exercises using alignment principles. Determination of indicator sag and thermal growth. Obtaining readings for alignment or misalignment. Rim- face method of alignment stressed and practiced	Prerequisites: None.	L+L 3.0 5.0 5.0
PPT215	Relief and Safety Valves	Concepts of pressure and pressure measurement. Components and operation of rupture discs, relief valves, and safety valves. Maintenance procedures	Prerequisites: None.	LEC 1.0 1.0 1.0



PPT217	Refueling Overview	Destack and restack operations of the Reactor Vessel. Purpose and location of refueling equipment. Refueling operation including spent fuel, refueling machines and fuel transfer equipment. Safety. New fuel receipt, transfer and moving of spent fuel	Prerequisites: None.	LEC 1.0 1.0 1.0
PPT218	Lathe Operations	Safe and proper operation of the lathe. Component and accessories and their functions. Cutting tools and methods. Processes of machining including mounting, aligning, knurling, grooving, turning, thread cutting, drilling, reaming boring, and tapping. Machining techniques using a chuck	Prerequisites: None.	L+L 2.0 4.0 4.0
PPT219	Milling Machine Operations	Components of horizontal and vertical milling machines. Common milling machine accessories and cutters. Cutting speeds, feeds and depths for materials and cutters. Machine set up and operations. Common cutter failure. Operation of horizontal and vertical milling machines. Milling safety	Prerequisites: None.	LEC 2.0 2.0 2.0
PPT220	Heat Transfer and Fluid Flow	Course covers topics in heat transfer, fluid flow and thermodynamics. Topics include the properties of fluids, modes of heat transfer, and the energy relationships in fluid systems.	Prerequisites: A grade of C or better in college-level math course, or appropriate District placement, or permission of Department/Division Chair.	LEC 3.0 3.0 3.0
PPT221	Reactor Theory	Basic nuclear reactor theory to include atomic and nuclear physics, thermodynamics, and heat transfer and fluid flow.	Prerequisites: A grade of C or better in PPT120 and GTC108, or permission of Program Director.	LEC 3.0 3.0 3.0
PPT222	Reactor Plant Chemistry and Materials	Basic nuclear reactor theory to include reactor chemistry, water chemistry, radiation detection and protection principles, and reactor plant materials.	Prerequisites: A grade of C or better in PPT120 or permission of Program Director.	LEC 3.0 3.0 3.0

PPT224EI	Components for Maintenance Technicians	Electrical component types and characteristics, such as circuit breakers and fuses, instrumentation schematics, protective relaying, and inverters.	Prerequisites: A grade of C or better in PPT202 or PPT203, or permission of Program Director.	LEC 1 1 1
PPT224EM	Electrical Components for Maintenance Technicians	In-depth reading and troubleshooting of electrical engineering and vendor prints. Operation and control of emergency power systems. Diesel Generators will also be covered.	Prerequisites: A grade of C or better in PPT202 or PPT203, or permission of Program Director.	LEC 1 1 1
PPT224IC	Instrumentation and Control for Maintenance Technicians	Operation of various types of radiation detectors, on-line chemistry instrumentation, process measurement systems, and process controls. Instrumentation associated with various plant systems, and troubleshooting and repair methods.	Prerequisites: A grade of C or better in PPT202 or PPT203.	LEC 1.0 1.0 1.0
PPT224MM	Mechanical Components for Maintenance Technicians	Mechanical component types and characteristics, common failure mechanisms, and operating principles of plant components.	Prerequisites: A grade of C or better in PPT202 or PPT203.	LEC 1.0 1.0 1.0
PPT225	Industrial Plant Chemistry and Materials	Fundamentals of industrial chemistry and materials to include chemistry principles, water chemistry control, cooling water chemistry, chemical hazards, and material science.	Prerequisites: A grade of C or better in college-level math course, or appropriate District placement, or permission of Department/Division Chair.	LEC 3.0 3.0 3.0
PPT228	Electric Plant Systems for Operators	Operation, components, instrumentation and controls, automatic features, and precautions and limitations of the Electric Plant Systems.	Prerequisites: A grade of C or better in PPT202 and PPT203.	LEC 1.0 1.0 1.0
PPT229	Auxiliary Plant Systems for Operators	Operation, components, instrumentation and controls, automatic features, and precautions and limitations of Auxiliary Plant Systems.	Prerequisites: A grade of C or better in PPT228.	LEC 3.0 3.0 3.0
PPT230	Nuclear Plant Systems	Operation, components, instrumentation and controls, automatic features, and precautions and limitations of nuclear plant systems.	Prerequisites: A grade of C or better in college-level math course, or appropriate District placement, or permission of Department/Division Chair.	LEC 3.0 3.0 3.0

PPT231	Secondary Plant Systems for Operators	Operation, components, instrumentation and controls, automatic features, and precautions and limitations of Secondary Plant Systems.	Prerequisites: A grade of C or better in PPT228.	LEC 3.0 3.0 3.0
PPT232	Reactor Plant Operations	Reactor plant safety design and operation. Covers basic reactor startup, shutdown, and emergency and abnormal operations procedures, and why those procedures are written. Explores interconnection of various plant systems and how changes and transients on one system effects other systems.	Prerequisites: A grade of C or better in PPT230 and PPT231.	LEC 3.0 3.0 3.0
PPT235	Nuclear Physics	Course provides a foundation for understanding atomic and nuclear physics, neutron characteristics, reactor theory, reactor operation, and radiation fundamentals.	Prerequisites: A grade of C or better in college-level math course, or appropriate District placement, or permission of Department/Division Chair.	LEC 3.0 3.0 3.0
PPT240	Non-Licensed Operator Practicum	Hands-on learning utilizing a functional flow loop and/or process controls simulation software. Application of learned skills and training, in an environment that will enhance the student's knowledge of working in the nuclear industry.	Prerequisites: A grade of C or better in PPT230 and PPT231.	L+L 3.0 4.0 4.0
PPT242	Components for Maintenance Technicians	Electrical component types and characteristics, such as circuit breakers and fuses, instrumentation schematics, protective relaying, and inverters. In-depth reading and troubleshooting of electrical engineering and vendor prints. Operation and control of emergency power systems. Diesel Generators will also be covered.	Prerequisites: A grade of C or better in (ELC119 and ELC120) or permission of Program Director.	L+L 2.0 2.0 2.0
PPT250	Power Plant Position Preparation	Prepares students for the Power Plant Maintenance Positions Selection System (MASS) examination. Reading comprehension, mechanical concepts, spatial ability, and mathematical usage.	Prerequisites: None.	LEC 2.0 2.0 2.0

PPT255	Fossil Systems	Upon completion, the student will be able to explain how fossil plant systems operate in accordance with reference materials.	Prerequisites: None.	L+L 3.0 3.0 3.0
PPT270AA	Power Systems Technology Internship	Work experience in power plant industry and / or related field. Five (5) hours of work weekly. Approval, supervision and evaluation by an internship coordinator.	Prerequisites: Permission of Department or Division.	L+L 1.0 5.0 0.0
PPT270AB	Power Systems Technology Internship	Work experience in power plant industry and / or related field. Ten (10) hours of work weekly. Approval, supervision and evaluation by an internship coordinator.	Prerequisites: Permission of Department or Division.	L+L 2.0 10.0 0.0
PPT270AC	Power Systems Technology Internship	Work experience in power plant industry and / or related field. Fifteen (15) hours of work weekly. Approval, supervision and evaluation by an internship coordinator.	Prerequisites: Permission of Department or Division.	L+L 3.0 15.0 0.0
PPT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PPT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

PPT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
PRM108	Property Management Associate Procedures	Basic overview of property management associate procedures. Covers types of properties, Fair Housing Act, and basic marketing skills. Also includes customer service, telephone techniques, touring prospective property, and leasing techniques to involve the application process, lease agreements, and closing procedures. Computerized leasing program emphasized	Prerequisites: None.	LEC 2.0 2.0 2.0
PRM110	Legal Aspects for Property Management	Overview of property management legalities. Includes lease agreements, vendor contracts, law principles, and eviction notices. Also covers federal regulations and compliance guidelines relative to fair housing, employment law, and resident screening.	Prerequisites: None. Corequisites: PRM112, PRM114 and PRM116.	LEC 1.0 1.0 1.0
PRM111	Introduction to Leasing Procedures	Leasing overview of procedures for property management associates. Includes telephone and leasing techniques to better the leasing process. Emphasis on leasing paperwork and the effects of the Internet on property management	Prerequisites: None.	LEC 1.0 1.0 1.0

PRM112	Property Management Procedures	Procedures for property managers. Covers effective customer service and communication skills. Includes budgets, occupancy, and methods for collecting and adjusting rent rates. Also covers property maintenance, reports and records.	Prerequisites: None. Corequisites: PRM110, PRM114 and PRM116.	LEC 1.0 1.0 1.0
PRM113	Advanced Leasing Procedures	Advanced leasing procedures for property management associates. Covers the closing process and marketing process	Prerequisites: A grade of C or better in PRM111.	LEC 0.5 0.5 0.5
PRM114	Property Risk Management	Overview of property risk management. Includes minimizing risks, property hazards, emergency plans, and Occupational Safety and Health Administration (OSHA) standards. Also covers loss prevention and control, financing the risk, and insurance liabilities.	Prerequisites: None. Corequisites: PRM110, PRM112 and PRM116.	LEC 1.0 1.0 1.0
PRM115	Residential Property Operations	Overview of general office procedures for an assistant property manager. Includes time management techniques and income revenue procedures. Also covers delinquent accounts and the Fair Credit Reporting Act	Prerequisites: None.	LEC 1.0 1.0 1.0
PRM116	Property Valuation and Market Analysis	Overview of property valuation and property market analysis, as well as property marketing and advertising. Factors involved in investment decisions and advantages and disadvantages of property investment included. Also covers effects of demographics, property layout, features, and rent on apartment markets.	Prerequisites: None. Corequisites: PRM110, PRM112 and PRM114.	LEC 1.0 1.0 1.0
PRM117	Property Management Accounts Payable Procedures	Overview of basic account payable procedures. Covers purchase order spreadsheets and payment processing. Usage of a computerized accounting system included	Prerequisites: None.	LEC 0.5 0.5 0.5

PRM118	Hiring Procedures for Property Managers	Overview of employment procedures for property managers. Includes recruitment and hiring procedures as well as employment laws. Interview procedures also covered	Prerequisites: None.	LEC 0.5 0.5 0.5
PRM119	Residential Property Management	Property management procedures for senior property managers. Includes budgets, planning, and setting goals. Also covers policies, procedures, payroll, and benefits	Prerequisites: None.	LEC 1.0 1.0 1.0
PRM120	Apartment Property Leasing	Apartment leasing principles, including responsibilities of a leasing professional. Includes initiating the leasing process, renting an apartment home, and moving in the new resident. Review product and market knowledge to better serve the community and legal aspects for leasing arrangements	Prerequisites: None.	LEC 2.0 2.0 2.0
PRM130	Apartment Appliances	Overview of basic apartment home appliance repair and appliance preventative maintenance procedures for the apartment maintenance technician. Includes identification of common appliances and their parts, sequence of operation, routine and preventative maintenance, adjustments and minor parts replacements associated with general make-ready tasks related to major home appliances.	Prerequisites: None.	LEC 1.0 1.0 1.0
PRM134	Apartment Plumbing Systems	Overview of apartment home plumbing systems. Includes make-ready tasks related to plumbing work for the apartment maintenance technician. Covers plumbing safety and materials as well as repairs and preventive maintenance for inside the apartment home.	Prerequisites: None.	L+L 1.0 1.5 1.5

PRM138	Apartment Home Electrical Systems	Overview of maintenance and operations of electrical systems for the apartment home. Includes make-ready tasks related to electrical work for apartment maintenance technician. Covers electrical safety, circuits and wiring. Also covers procedures and equipment for electrical repairs.	Prerequisites: None.	L+L 1.0 1.5 1.5
PRM142	Apartment Maintenance: Basic HVAC	Overview of Heating Ventilation Air Conditioning (HVAC) procedures for the apartment home. Includes make ready tasks for the apartment maintenance technician. Covers identification of parts, sequence of operations, preventive maintenance, and minor adjustments and replacements.	Prerequisites: None.	LEC 2.0 2.0 2.0
PRM146	Apartment Interior/Exterior Maintenance	Overview of practical skills required of the certified apartment maintenance technician for interior and exterior maintenance. Includes "make-ready" procedures as well as repairs of walls, ceilings and tile. Also covers curb appeal considerations.	Prerequisites: None.	L+L 0.5 0.5 0.5
PSG140	Respiratory Care Fundamentals and Physiology for Polysomnography	Introduction to the development and implementation of prescribed care plans for sleep-related breathing disorders. Administration of basic respiratory therapeutic modalities for sleep-related breathing disorders and non-invasive assisted breathing. Use and maintenance of all forms of positive airway pressure therapy with specific knowledge of how algorithms function when using advanced positive pressure therapies. Basic respiratory physiology as it relates to sleep-related breathing disorders.	Prerequisites: Admission to the Polysomnographic Technology program.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0



PSG150	Introduction to Sleep Medicine	Introduction to the fundamental concepts of polysomnography, sleep technology and sleep medicine. Emphasis on nomenclature, technical and medical roles, normal sleep, sleep disorders, and professional organizations and resources.	Prerequisites: Admission into the Polysomnographic Technology program. Corequisites: PSG150LL.	LEC 3.0 3.0 3.0
PSG150LL	Introduction to Sleep Medicine Laboratory	Introduction to the fundamental concepts of polysomnography, sleep technology and sleep medicine in the laboratory setting. Emphasis on nomenclature, technical and medical roles, normal sleep, sleep disorders, and professional organizations and resources.	Prerequisites: Admission to the Polysomnographic Technology program. Corequisites: PSG150.	LAB 1.0 3.0 3.0
PSG160	Polysomnographic Procedures	Practical application of clinical procedures germane to the performance of polysomnography. Emphasis on patient assessment and communications, pre-test preparations, patient hook-up, instrument calibration and operation, test termination, cleanup and troubleshooting.	Prerequisites: Admission into the Polysomnographic Technology program. Corequisites: PSG160LL.	LEC 2.0 2.0 2.0,
PSG160LL	Polysomnographic Procedures Laboratory	Practical application of clinical procedures germane to the performance of polysomnography. Emphasis on patient assessment and communications, pre-test preparations, patient hook-up, instrument calibration and operation, test termination, cleanup and troubleshooting.	Prerequisites: Admission to the Polysomnographic Technology program. Corequisites: PSG160.	LAB 1.0 3.0 3.0
PSG165	Clinical Polysomnographic I	Introduction to a sleep disorders center, observation of a center conducting polysomnography, and participation in performance of associated procedures. Emphasis on patient preparation, testing protocol, instrument calibration and operation, documentation, and patient interactions	Admission into the Polysomnography Technology program.	LAB 3.0 15.0 0.0

PSG170	Sleep Therapeutics	Review of sleep therapies to include medical treatment of insomnia, hypersomnia, restless legs syndrome, periodic limb movement disorder, rapid eye movement sleep behavior disorder, parasomnias, and the use of positive airway pressure therapy and/or oxygen therapy to treat sleep-disordered breathing.	Prerequisites: Admission into the Polysomnographic Technology program. Corequisites: PSG170LL.	LEC 2.0 2.0 2.0,
PSG170LL	Sleep Therapeutics Laboratory	Perform sleep therapies to include medical treatment of insomnia, hypersomnia, restless legs syndrome, periodic limb movement disorder, rapid eye movement sleep behavior disorder, parasomnias, the use of positive airway pressure therapy and/or oxygen therapy to treat sleep-disordered breathing.	Prerequisites: Admission to the Polysomnographic Technology program. Corequisites: PSG170.	LAB 1.0 3.0 3.0
PSG250	Record Scoring	Polysomnographic record scoring including visual, arousal, cardiac, movement, and respiratory scoring rules outlined by the American Academy of Sleep Medicine. Polysomnogram report generation and calculations, technical and digital specifications, multiple sleep latency test/maintenance of wakefulness test scoring and reporting, and archive and data storage, abnormal polysomnographic record events, and artifact recognition.	Prerequisites: Admission into the Polysomnographic Technology program. Corequisites: PSG250LL.	LEC 2.0 2.0 2.0,
PSG250LL	Record Scoring Laboratory	Polysomnographic record scoring including visual, arousal, cardiac, movement, and respiratory scoring rules outlined by the American Academy of Sleep Medicine (AASM). Polysomnogram report generation and calculations, technical and digital specifications, multiple sleep latency test/maintenance of wakefulness test scoring and reporting, and archive and data storage, abnormal polysomnographic record events, and artifact recognition.	Prerequisites: Admission to the Polysomnographic Technology program. Corequisites: PSG250.	LAB 1.0 3.0 3.0

PSG260	Special Topics in Polysomnography	Specialized techniques, equipment and procedures used in polysomnography. Emphasis on infant, pediatric and geriatric populations, disabled and emotionally/mentally challenged, Polysomnograms with legal implications, research, and less commonly performed procedures	Admission into the Polysomnography Technology program.	LEC 2.0 2.0 2.0
PSG265	Clinical Polysomnography II	Participation in clinical polysomnography testing. Emphasis on patient preparation, troubleshooting, therapeutics, proper documentation, record review, scoring and report generation	Admission into the Polysomnography Technology program.	LAB 2.0 10.0 0.0
PSG275	Clinical Polysomnography III	Clinical polysomnography testing. Emphasis on independent function and decision making, time management, record review, scoring and report preparation	Admission into the Polysomnography Technology program.	LAB 3.0 15.0 0.0
PSG282AA	Volunteerism for Polysomnographic Technology: Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 1.0
PSY101	Introduction to Psychology	To acquaint the student with basic principles, methods and fields of psychology such as learning, memory, emotion, perception, physiological, developmental, intelligence, social and abnormal	Prerequisites: None.	LEC 3.0 3.0 3.0
PSY102	Introduction to Psychology Lab	Optional laboratory designed to accompany PSY101. Application of psychological principles in areas such as learning, memory, emotion, motivation, cognition, language, development, personality, and intelligence.	Prerequisites: A grade of C or better in PSY101 or Corequisites: PSY101 or permission of Instructor.	LAB 1.0 1.0 1.0
PSY123	Psychology of Parenting	The demonstration and application of psychological principles to the development and guidance of children and adolescents	Prerequisites: None.	LEC 3.0 3.0 3.0

PSY132	Psychology and Culture	Presents current knowledge about human diversity in behavior and culture using examples from a variety of contexts within western and global societies. Highlights topics in cross-cultural psychology, such as intergroup relations, diverse cognitive styles, ethnocentrism, gender, personality, emotion, language, communication, work and health. The role of enculturation throughout the lifespan will be explored to increase awareness of how behavioral and cognitive principles affect interactions in a multicultural world.	Prerequisites: None.	LEC 3.0 3.0 3.0
PSY143	Lesbian, Gay, Bisexual and Transgendered Studies	Introduction to the study of lesbian, gay, bisexual, and transgendered individuals. Includes psychological, developmental, social, biological, historical and cultural aspects. Review of research literature regarding the etiology and assessment of sexual orientation, prejudice, and discrimination, and family issues. Current issues in lesbian/gay/bisexual/transgendered studies	Prerequisites: None.	LEC 3.0 3.0 3.0
PSY156	Understanding Death and Dying	Designed to give the student an understanding of the research and theories of death, dying and the bereavement process	Prerequisites: None.	LEC 3.0 3.0 3.0

PSY157	African/Black Psychology	Historical overview of the development of Black Psychology and the African-American "frame of reference." Includes topics such as family, psychological assessment, mental health, male/female relationships, personality and community development as well as educational, ethical and contemporary issues. Critical examination of psycho-cultural forces which have helped to shape and determine the unique thought, styles, behavior of African-Americans and to gain a greater appreciation of the theories, research, writings, and activities of Black Psychologists.	Prerequisites: None.	LEC 3.0 3.0 3.0
PSY201AC	Selected Issues in Psychology	In-depth investigation of topical issues in Psychology. Promotes understanding of the psychological theory, application, and critical reasoning about the selected psychological issues and topics. Potential topics may include, but not limited to, parenting, gender, applied cognitive psychology, personality, perception, applied-experimental interventions, motivation, emotion, cultural psychology, methodology paradigms, history and systems, development, and intelligence.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY210	Educational Psychology	Scientific research and psychological principles as they apply to teaching and learning. The role of psychology in educational settings, human diversity, theories of learning, intelligence, memory, creativity, assessment, and factors influencing effective instruction and learning.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0

PSY215	Introduction to Sport Psychology	Application of the physiological, behavioral, social, cognitive, and humanistic perspectives in psychology to sport. Includes topics such as optimal performance, correlation, motivation, co-action effect, self-actualization, psycho-behavioral techniques, self-efficacy, and the general health benefits of sport participation.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY218	Health Psychology	Behavioral and mental foundations of health, wellness, illness, and disease, and psychological dimensions of medical intervention.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY225	Psychology of Religion	Provides an introduction to the history, varieties and theories of the psychology of religion from an empirical, research-based perspective. Specific areas of study include the role of gender, age, socioeconomic status, and personality on religious experience, the effects of religion and prayer on mental and physical health, the development of religious thought and behavior over the lifespan, and the social psychology of new religious movements. In addition, the role of cultural differences on religious attitudes both within the USA and around the world is also addressed.	Prerequisites: A grade of C or better in PSY101 or Permission of Instructor.	LEC 3.0 3.0 3.0
PSY230	Introduction to Statistics	An introduction to basic concepts in descriptive and inferential statistics, with emphasis upon application to psychology. Consideration given to the methods of data collection, sampling techniques, graphing of data, and the statistical evaluation of data collected through experimentation. Required of psychology majors.	Prerequisites: (A grade of "C" or better in PSY101 and MAT092 or higher MAT course) or (a grade of "C" or better in PSY101 and eligibility for MAT112 or higher as indicated by appropriate mathematics placement test score) or permission of Instructor.	LEC 3.0 3.0 3.0
PSY231	Laboratory for Statistics	Applications of inferential and descriptive statistics to computers in the field of psychology.	Prerequisites: None. Corequisites: PSY230.	LAB 1.0 2.0 2.0

PSY235	Psychology of Gender	To assess historical and psychological perspectives on women and men and to evaluate contemporary viewpoints regarding the psychology of women and men.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY240	Developmental Psychology	Human development from conception through adulthood. Includes: physical, cognitive, emotional and social capacities that develop at various ages. Recommended for students majoring in nursing, education, pre-med, and psychology.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY241	Understanding and Changing Behavior	Theory and methods for observing, analyzing, and modifying behavior.	Prerequisites: A grade of C or better in PSY101 or Corequisites: PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY242	Understanding and Changing Behavior Lab	Advanced course designed to enable students to apply the principles of Applied Behavior Analysis (ABA) in a lab setting. Incorporates case studies and hands-on employment of best practices. Also includes practice with behavioral research design and implementation. Reviews current research in areas including, but not limited to, schedules of reinforcement, functional behavior assessment, stimulus discrimination and generalization.	Prerequisites: A grade of C or better in PSY241.	LAB 3.0 3.0 3.0
PSY243	The Psychology of Developmental Disabilities	The interrelationships among the physical, intellectual, social, and psychological aspects of developmental disabilities (DD). Various service approaches, policies, and programs designed to foster an adequate adjustment for individuals with DD and their families. Values and beliefs relating to persons with developmental disabilities.	Prerequisites: A grade of C or better in PSY101 or Corequisites: PSY101.	LEC 3.0 3.0 3.0

PSY244	Internship in Psychology	Experience in working in a wide variety of settings including but not limited to schools, non-profit agencies, advocacy agencies and other governmental agencies. 80 hours of designated volunteer or paid work.	Prerequisites: (Any two 200-level PSY courses with grades of C or better) or (Any 200-level PSY course with grade of C or better and Corequisites: Any additional 200 level PSY course) and permission of Instructor.	L+L 1.0 1.0 0.0
PSY248	Psychology of Adolescent Development	Explores the highly specialized developmental stage of adolescence. Includes biological, cognitive, psychosexual, and sociocultural factors as well as current theories and research.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY250	Social Psychology	The scientific study of how people's thoughts, feelings, and behaviors are influenced by other people and situations. Includes how we think about ourselves and others, persuasion and influence, sexual and romantic attraction, friendship and helping others, aggression and prejudice.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY260	Psychology of Personality	Introduction to theories of personality with emphasis upon application of specific theories towards the understanding of individuals.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY262	Positive Psychology	Overview and application of psychological principles based on strengths and resilience of human beings as opposed to dysfunction and symptoms of mental disorders. Topics include happiness, relationships, resilience, optimism, well-being, and brain research explaining positive emotions.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0



PSY266	Abnormal Psychology	Distinguishes between normal behavior and psychological disorders. Subjects may include stress disorders, problems with anxiety and depression, unusual and abnormal sexual behavior, schizophrenia and addictive behaviors. Causes and treatments of psychological problems and disorders are discussed.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY267	Introduction to Forensic Psychology	Overview of the practice of psychology in the law, by the law, and of the law. Focuses on the complementary functions and distinctions between psychology and the legal justice system. Topics include, but are not limited to, criminal investigations, risk and level of danger, competency, interrogations, confessions, assessment, eyewitness testimony, child custody, and domestic violence.	Prerequisites: A grade of C or better in PSY101.	LEC 3.0 3.0 3.0
PSY270	Personal and Social Adjustment	Surveys the basic mental health principles as they relate to coping with stress, interpersonal relationships, sex, marriage, and working. Emphasis on learning to become a more competent and effective person.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY271	Tests and Measurements	Overview of assessment instruments commonly used in research in psychology. Includes current directions in psychological assessment as well as the broader historical context from which the field has emerged. Cultural and sociological considerations of psychological tests and measurements	Prerequisites: A grade of C or better in PSY101.	LEC 3.0 3.0 3.0
PSY275	Biopsychology	Biological foundations of sensation, perception, motivation, emotion, cognition and psychopathology. Designed for students in the life sciences.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	L+L 4.0 5.0 5.0

PSY277	Psychology of Human Sexuality	Survey of psychological and physiological aspects of human sexual behavior. Emphasis placed on the integration of the cognitive, emotional, and behavioral factors in sexual functioning.	Prerequisites: A grade of C or better in PSY101.	LEC 3 3 3
PSY280	Industrial/Organizational Psychology	The application of psychological principles to business and industry practices including organizational structure, leadership, personnel, employee stress and conflict, workplace conditions and job performance.	Prerequisites: A grade of C or better in PSY101 with a grade of C or better, or permission of Instructor.	LEC 3 3 3
PSY282AA	Volunteerism Service Learning Experience in Psychology	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in PSY101 and permission of Instructor.	LAB 1.0 1.0 0.0
PSY282AB	Volunteerism Service Learning Experience in Psychology	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in PSY101 and permission of Instructor.	LAB 2.0 2.0 0.0
PSY282AC	Volunteerism Service Learning Experience in Psychology	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in PSY101 and permission of Instructor.	LAB 3.0 3.0 0.0
PSY290AB	Research Methods	Planning, execution, analysis, and written reporting of psychological research using American Psychological Association guidelines (APA). Surveys the literature, procedures, and instruments in representative areas of psychological research.	Prerequisites: A grade of C or better in ENG101 or ENG107. Prerequisites or Corequisites: PSY230 or permission of instructor.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PSY290AC	Research Methods	Planning, execution, analysis, and written reporting of psychological research using American Psychological Association guidelines (APA). Surveys the literature, procedures, and instruments in representative areas of psychological research.	Prerequisites: A grade of C or better in ENG101 or ENG107 or Corequisites: PSY230 or permission of instructor.	LEC 3.0 3.0 3.0 LAB 1.0 2.0 2.0

PSY292	Psychology of Altered States of Consciousness	Examines phenomena and history of altered states of consciousness. Surveys scientific principles, methods and applications in altered states research. Reviews current psychological research in topics related to sensory deprivation, daydreaming, meditation, hypnosis, sleep and dreams, and the effects of drugs.	Prerequisites: A grade of C or better in PSY101 or permission of Instructor.	LEC 3.0 3.0 3.0
PSY294AA	Special Topics: Developmental Disabilities	Explore special topics related to services and supports for individuals with developmental disabilities. Topics include concepts relevant to those pursuing careers in or employed in human service organizations or schools serving children and/or adults with developmental disabilities and their families.	Prerequisites: A grade of C or better in PSY243 or Corequisites: PSY243.	LEC 2.0 2.0 2.0
PSY295AA	Independent Research in Psychology	Original scientific investigation of psychology-related phenomenon.	Prerequisites: A grade of C or better in PSY290++ or Corequisites: PSY290++ or permission of Instructor.	LAB 1.0 1.0 0.0
PSY296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

PSY296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
PSY296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
PSY296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

PSY298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
PSY298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
PSY298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

PTA101	Survey of Physical Therapy	History of Physical Therapy. Purpose, benefits, and goals of the Arizona and American Physical Therapy Associations (APTA). Roles and responsibilities of physical therapists (PT) and physical therapist assistants (PTA). Patient care, legal issues, principles of physical therapy treatment, education requirements, and functions of the American Physical Therapy Association. Clinical practice settings used in the provision of physical therapy services. Common medical conditions and injuries treated by PT's and PTA's. Emerging opportunities in the practice of physical therapy.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.	LEC 1.5 1.5 1.5
PTA102	Structured Physical Therapist Assisting Review	Structured physical therapist assisting tutorial assistance and physical therapist assisting study skills related to physical therapist assisting courses. Physical therapist assisting process and critical thinking application skills emphasized.	Prerequisites: None. Corequisites: Enrollment in the Physical Therapist Assisting program or permission of Department Chair.	LEC 1.0 1.0 1.0
PTA103	Kinesiology	Physical principles of human motion. Emphasis on structure, movement, and stability of specific joints. Normal and abnormal human locomotion. Stabilizing and motion producing forces upon extremities and the spine including muscles, ligaments, and cartilage. Discussion of common joint deformities. Kinesiological analysis of functional movement of the human body.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.	LEC 3.0 3.0 3.0

PTA104	Musculo-Skeletal Assessment Techniques	Theory and principles of goniometry and manual muscle testing. Measure range of motion of joints and strength of muscles of the head, face, neck, trunk and extremities. Normal range of motion of the spine and extremities. Assess posture and common postural deviations. Palpate and identify pertinent bony and soft tissue structures. Document results of goniometric measurement, muscle testing, palpation and posture assessment. Perform data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.	LAB 1.5 4.5 4.5
PTA152	Musculoskeletal Kinesiology and Assessment Techniques in Sonographic Imaging	Joint movements and planes of motion. Normal anatomy of the extremities. Tissue physiology. Pathological structures and their relationships. External palpation and relation to imaging.	Prerequisites: Admission to Diagnostic Medical Sonography program or permission of the Program Director.	L+L 4.0 6.0 6.0
PTA200	Patient Mobility Techniques	Theory, principles and practice of proper body mechanics. Principles and techniques of gait training, bed mobility and transfers, wheelchair mobility. Theory, principles, and techniques of therapeutic exercise. Patient instruction, data collection, assistive devices and equipment used by the physical therapist assistants and their patients. Safety and first aid in physical therapy practice settings including contraindications for therapeutic interventions. Document physical therapy interventions. Perform physical therapy interventions in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist.	Prerequisites: A grade of C or better in (PTA101, PTA103, and PTA104) or permission of the Program Director.	LEC 4.0 2.0 2.0 LAB 0.0 6.0 6.0

PTA202	Therapeutic Modalities	<p>Stages of inflammation responses and tissue repair. Theories on pain. Guidelines for patient positioning and safety. Physiological effects of therapeutic modalities. Principles and application of thermal agents. Apply superficial and deep thermal agents, cryotherapy, ultrasound, electromagnetic radiation, massage, hydrotherapy, light, intermittent venous compression therapies, and traction. Indications and contraindications for treatment methods. Concepts in research in physical therapy. Document physical therapy interventions. Perform physical therapy interventions including relevant data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist.</p>	Prerequisites: A grade of C or better in (PTA101, PTA103, and PTA104) or permission of the Program Director.	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0
PTA203	Clinical Pathology	Terminology and definitions used in discussion of human pathology. Disease processes frequently encountered in physical therapy practice. Functional anatomy, select medical tests for diagnoses, and medication and effects in providing physical therapy. Principles of disease prevention.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.	LEC 3.0 3.0 3.0
PTA205	Communication in Physical Therapy	Communication skills in the Physical Therapy setting. Self-image in communication. Active listening, responding to problems, body language, patient interview skills. Communicating with chronically ill and dying patients and their families. Communicating with persons with disabilities. Cultural differences in communication and views of Health Care.	Admission to the Physical Therapist Assisting program or permission of Department or Division.	LEC 1.5 1.5 1.5



PTA206	Clinical Practicum I	Clinical experience with advanced beginner or higher level of performance for physical therapist assisting students. Application of physical therapy skills and techniques in specific clinical settings including outpatient, hospital, rehabilitation and skilled nursing care.	Prerequisites: A grade of C or better in (PTA200, PTA202, PTA203, and PTA205), or permission of the Program Director. Corequisites: PTA207.	LAB 3.0 15.0 0.0
PTA207	Clinical Practicum Seminar I	Integration of non-clinical aspects of clinical practicums with clinical performance in Clinical Practicum I. Emphasis on clinical journaling, in-service and case presentations, and documentation of patient care interventions.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director. Corequisites: PTA206.	LEC 1.0 1.0 1.0
PTA208	Rehabilitation of Special Populations	Rehabilitation strategies for brain injured patients. Neurodevelopmental treatment emphasized. Theories and alternative physical therapy treatment for neurologically impaired patients. Clinical applications and treatment of patients. Proprioceptive neuromuscular facilitation (PNF), cardiopulmonary rehabilitation, spinal cord injury and amputee management, and prosthetics/orthotics. Motor development and changes across the lifespan including developmental motor milestones and normal reflexes and reactions. Emphasis on proficiency in hands-on techniques.	Prerequisites: A grade of C or better in (PTA200, PTA202, PTA203, and PTA205), or permission of the Program Director.	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0

PTA210	Orthopedic Physical Therapy	Response of human bone and soft-tissue to injury. Orthopedic and medical management and physical therapy interventions for common injuries of the extremities and spine. Common orthopedic surgeries. Joint mobilization techniques. Body mechanics and therapeutic exercise programs. Documentation procedures. Perform physical therapy interventions including relevant data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist.	Prerequisites: A grade of C or better in (PTA206 and PTA207) or permission of the Program Director.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0
PTA214	Electromodalities	Electrical currents for physical therapy. Types of human muscular contractions. Safety stressed. Application of electrical currents for physical therapy. Uses and implications of electrical nerve tests. Biophysical effects of transcutaneous electrical nerve stimulation. Use of low volt, high volt, and interferential electrical stimulation devices. Neuromuscular electrical stimulation (NMES). Use of biofeedback in physical therapy. Perform physical therapy interventions using including relevant data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist.	Prerequisites: A grade of C or better (PTA206 and PTA207) or permission of the Program Director.	LEC 2.5 1.5 1.5 LAB 0.0 3.0 3.0
PTA215	Wound Care for the Physical Therapist Assistant	Introduction to current concepts in wound care management techniques for the physical therapist assistant including skin anatomy and physiology, principles of healing, types of wounds, and therapeutic interventions.	Admission to the Physical Therapist Assisting program or permission of Department or Division.	LEC 1.0 1.0 1.0

PTA217	Clinical Neurology	Anatomy and function of the brain, spinal cord and peripheral nervous system. Review of motor and sensory innervation and spinal tracts. Specific diseases of the central and peripheral nervous systems related to the physical therapy plan of care. Emphasis on clinical signs and symptoms of neurological disorders.	Prerequisites: A grade of C or better in (PTA101, PTA103, PTA104, PTA200, PTA203, and PTA206) or permission of the Program Director.	LEC 2.0 2.0 2.0
PTA230	Physical Therapy Seminar	Current practices and issues in physical therapy. Clinical problem solving, ethics, legal aspects, reimbursement, management, research. Resume preparation and job interviewing skills. Stress management techniques. Total quality management principles. Employment issues. Prevention of fraud and abuse. Career and professional development. Job descriptions, performance assessments, and wage and salary administration.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.	LEC 2.0 2.0 2.0
PTA240	Peripheral Joint Mobilization Techniques for the Physical Therapist Assistant	Peripheral joint mobilization techniques for the upper and lower extremity joints. Concepts, indications, and contraindications. Documentation. Statutes and policies regarding joint mobilizations.	Certification or licensure as a Physical Therapist Assistant and six months clinical practice.	L+L 1.0 1.0 1.0
PTA280	Clinical Practicum II	Clinical experience requiring an intermediate or higher level of clinical performance by the physical therapist assisting students. Application of physical therapy skills and techniques in various clinical settings including outpatient, hospital, rehabilitation and skilled nursing.	Prerequisites: A grade of C or better in (PTA208, PTA210, PTA214, and PTA217), or permission of Program Director. Corequisites: PTA281.	LAB 3.0 15.0 0.0
PTA281	Clinical Practicum Seminar II	Integration of non-clinical aspects of clinical practicums with clinical performance in Clinical Practicum II. Emphasis on clinical journaling, in-service and case presentations, and documentation of patient care interventions.	Prerequisites: Admission to the Physical Therapist Assisting program, or permission of Department or Division. Corequisites: PTA280.	LEC 1.0 1.0 1.0

PTA290	Clinical Practicum III	Clinical experience with entry-level performance for physical therapist assisting students. Application of physical therapy skills and techniques in specific clinical settings including outpatient, hospital, rehabilitation and skilled nursing.	Prerequisites: A grade of C or better in: PTA208, PTA210, PTA214, and PTA217 or permission of Department or Division. Corequisites: PTA292.	LAB 3.0 15.0 0.0
PTA292	Clinical Practicum Seminar III	Integration of non-clinical aspects of clinical practicums with clinical performance in Clinical Practicum III. Emphasis on clinical journaling, in-service and case presentations, and documentation of patient care interventions.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Department or Division. Corequisites: PTA290.	LEC 1.0 1.0 1.0
PTA295	Physical Therapist Assistant Examination Review	Preparation for the physical therapist assistant examination administered by the Federation of State Boards of Physical Therapy. Topics include physical therapy management of patients with musculoskeletal, neurological, integumentary and cardiopulmonary system diseases and complications. Therapeutic modalities, therapeutic exercise, functional mobility activities, and data collection techniques. Documentation and ethical/legal considerations in practice of physical therapy.	Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.	LEC 2.0 2.0 2.0
QCT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

QCT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
QCT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
QCT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

QCT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
QCT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
QCT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

RAD100	Introduction to Radiologic Science and Health Care	Provides an overview of the foundations of radiography and the practitioner's role in health care delivery. Principles, practices and policies of health care organizations will be examined and discussed in addition to the professional responsibilities of the radiographer.	Prerequisites: Admission to the Medical Radiography Program.	LEC 3.0 3.0 3.0
RAD101	Ethics and Law in the Radiologic Sciences	Foundation in ethics and law related to the practice of medical imaging. An introduction to terminology, concepts and principles will be presented.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
RAD102	Structured Diagnostic Medical Imaging Skills Enhancement I	Structured medical imaging cognitive and non-cognitive learning, study skills, and strategies to help students achieve success in their respective imaging courses. Medical imaging learning process and critical thinking application skills are emphasized.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
RAD103	Radiation Protection in Radiologic Technology	Content presents an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations are incorporated.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0
RAD104	Imaging Equipment	Content establishes a knowledge base in radiographic, fluoroscopic and mobile equipment requirements and design. Content also provides a basic knowledge of quality control.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0

RAD105	Radiation Production and Principles of Exposure	Content establishes a basic knowledge of atomic structure and terminology and a base in technical factors that govern the image production process. Also presented are the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.5 2.0 2.0 LAB 0.0 1.5 1.5
RAD106	Patient Care in Radiologic Sciences I	Content provides the foundational concepts of optimal patient care, including consideration for the physical and psychological needs of the patient and family. Routine and emergency patient care procedures are described, as well as infection control procedures using standard precautions. The role of the radiographer in patient education is identified.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.5 2.0 2.0 LAB 0.0 1.5 1.5
RAD107	Radiographic Procedures I	Content provides the knowledge base necessary to perform standard imaging procedures. Focus is on upper extremities, lower extremities, shoulder, and thorax. Consideration is given to the evaluation of optimal diagnostic images.	Prerequisites: Admission to the Medical Radiography Program.	LEC 3.0 3.0 3.0 LAB 0.0 3.0 3.0
RAD109	Radiography Practicum I	Clinical practice experience to develop and apply concepts and theories in the performance of radiologic procedures. Concepts of team practice, patient-centered clinical practice, and professional development are discussed, examined and evaluated. Focus is on patient care and assessment and competent performance of radiologic imaging. Imaging procedures are performed under the appropriate supervision of a qualified radiographer.	Prerequisites: Admission to the Medical Radiography Program.	LAB 3.5 19.0 0.0



RAD112	Structured Diagnostic Medical Imaging Skills Enhancement II	Focus is on the application of structured medical imaging cognitive and non-cognitive learning, study skills, and strategies to help students achieve success in their respective imaging courses and their first clinical experience. Medical imaging learning process and critical thinking application skills introduced in the Structured Diagnostic Medical Imaging Skills Enhancement I course are reinforced; and advanced concepts are introduced.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
RAD114	Digital Image Acquisition and Display I	Imparts an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0
RAD116	Patient Care in Radiologic Sciences II	Content provides advanced concepts of optimal patient care, including consideration for assessment of vital signs. Trauma and emergency patient care procedures are described, as well as surgical asepsis concepts. The role of the radiographer in surgical settings is also discussed.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.5 2.0 2.0 LAB 0.0 1.5 1.5
RAD117	Radiographic Procedures II	Content provides the knowledge base necessary to perform standard imaging procedures. Focus is on abdomen, pelvic girdle, vertebral column, and cranium. Contrast studies specific to the gastrointestinal system are also addressed. Consideration is given to the evaluation of optimal diagnostic images.	Prerequisites: Admission to the Medical Radiography Program.	LEC 3.0 3.0 3.0 LAB 0.0 3.0 3.0

RAD119	Radiography Practicum II	Clinical practice experience to develop, apply, reinforce, and integrate concepts and theories in the performance of radiologic procedures. Concepts of team practice, patient-centered clinical practice, and professional development are practiced, examined, and evaluated. Focus is on patient care and assessment and competent performance of radiologic imaging. Imaging procedures are performed under the appropriate supervision of a qualified radiographer.	Prerequisites: Admission to the Medical Radiography Program.	LAB 6.0 36.0 0.0
RAD203	Radiation Biology	Provides an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole are presented. Factors affecting biological response are presented, including acute and chronic effects of radiation.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0
RAD206	Pharmacology and Venipuncture	Content provides basic concepts of pharmacology, venipuncture and administration of diagnostic contrast agents and intravenous medications. The appropriate delivery of patient care during these procedures is emphasized.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0 LAB 0.0 1.0 1.0
RAD207	Radiographic Procedures III	Content provides the knowledge base necessary to perform advanced imaging procedures. Focus is on special studies, trauma, and surgical procedures. Contrast studies specific to the urinary system are also addressed. Consideration is given to the evaluation of optimal diagnostic images.	Prerequisites: Admission to the Medical Radiography Program.	LEC 3.0 3.0 3.0 LAB 0.0 1.5 1.5

RAD208	Image Analysis I	Provides a basis for analyzing radiographic images. Included are the importance of optimal imaging standards, the use of problem-solving techniques for image evaluation, and the factors that can affect image quality. Focus on the analysis of images for the upper extremity, shoulder, lower extremity, bony thorax, upper airway, and chest.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
RAD209	Radiography Practicum III	Continued clinical practice experience to further develop, apply, reinforce, and integrate concepts and theories in the performance of radiologic procedures. Concepts of team practice, patient-centered clinical practice, and professional development are practiced, examined, and evaluated. Focus remains on patient care and assessment and competent performance of radiologic imaging. New experiences in special procedural environments. Imaging procedures are performed under the appropriate supervision of a qualified radiographer.	Prerequisites: Admission to the Medical Radiography Program.	LAB 5.0 29.0 0.0
RAD212	Structured Diagnostic Medical Imaging Skills Enhancement III	Use of skills and resources for preparing for the American Registry of Radiologic Technologists (ARRT) exam. Utilization of career and educational planning resources is emphasized.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
RAD214	Digital Image Acquisition and Display II	Imparts an understanding of the image acquisition errors related to components, principles and operation of digital imaging systems found in diagnostic radiology. Principles of digital system quality assurance and maintenance are presented. The concept of "as low as reasonably achievable" (ALARA) as it relates to digital imaging systems is also covered.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0 LAB 0.0 1.5 1.5

RAD217	Radiographic Pathology and Additional Modalities	Introduces concepts related to disease and etiological considerations with emphasis on radiographic appearance of disease. Additional modalities are also discussed.	Prerequisites: Admission to the Medical Radiography Program.	LEC 2.0 2.0 2.0
RAD218	Image Analysis II	Provides a basis for analyzing radiographic images. Included are the importance of optimal imaging standards, the use of problem-solving techniques for image evaluation, and the factors that can affect image quality. Focus on analysis of images for the abdomen, pelvic girdle, vertebral column, cranium, and special studies.	Prerequisites: Admission to the Medical Radiography Program.	LEC 1.0 1.0 1.0
RAD219	Radiography Practicum IV	Continued clinical practice experience to further develop, apply, reinforce, and integrate concepts and theories in the performance of radiologic procedures. Concepts of team practice, patient-centered clinical practice, and professional development are practiced, examined, and evaluated. Focus remains on patient care and assessment and competent performance of radiologic imaging. Continued experiences in special procedural environments. Imaging procedures are performed under the appropriate supervision of a qualified radiographer.	Prerequisites: Admission to the Medical Radiography Program.	LAB 5.0 29.0 0.0
RBT296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

RBT296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
RBT296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
RBT296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

RBT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
RBT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
RBT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

RDG008	Phonics	Designed for students who are learning English as a second language. Includes the study of the speech sounds used in English as represented by the written symbols of the alphabet; recognition of spelling patterns and resulting pronunciation; and diacritical markings	Reading placement score (CELSA).	LEC 3.0 3.0 3.0
RDG013	Spelling Development for ESL Speakers (Non-native Speakers)	Study of basic English spelling principles with emphasis on common spelling errors due to mispronunciation. Examination of homonyms, homophones, homographs, and contractions. Creating personalized mnemonic techniques to spell problem words	Prerequisites: A grade of C or better in RDG010 with grade of C or better or permission of Instructor.	LEC 3.0 3.0 3.0
RDG016	Reading English as a Second Language I	Designed for students who are learning English as a second language. Skills needed to become proficient readers in English. Sound symbol relationships of the English alphabet. Essential vocabulary for daily communication both in isolation and context. Development of reading comprehension skills.	Appropriate ESL placement test score.	LEC 3.0 3.0 3.0
RDG026	Reading English as a Second Language II	Designed for students who are learning English as a second language. Continued development of vocabulary and reading comprehension skills.	Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL/RDG016, or permission of Instructor.	LEC 3.0 3.0 3.0
RDG031	Advanced Vocabulary for ESL Speakers (Non-native Speakers)	Designed to expand and improve reading vocabulary skills. Emphasis on understanding advanced vocabulary in both context and isolation through practice and review. Vocabulary building strategies which will aid in on-going study of words. Emphasis on both learning and using more advanced vocabulary effectively.	Prerequisites: A grade of C or better in RDG020 or permission of Instructor.	LEC 3.0 3.0 3.0
RDG036	Reading English as a Second Language III	Designed for students who are learning English as a second language. Instruction for more advanced vocabulary and reading comprehension skills.	Prerequisites: Appropriate ESL placement test score, or grade of C or better in ESL/RDG026, or permission of Instructor.	LEC 3.0 3.0 3.0

RDG046	Reading English as a Second Language IV	Developed for students of English as a second language. Development of advanced vocabulary, comprehension skills, and culture awareness.	Prerequisites: Appropriate ESL placement test score, or grade of C or better in ESL/RDG036, or permission of Instructor.	LEC 3.0 3.0 3.0
RDG071	Basic Reading	Provide opportunities for practice and application of basic reading skills. Includes phonic analysis, word recognition, structural analysis, use of context clues, and use of dictionary, reinforced through practical application. Development of vocabulary required for success in content area courses. Emphasis on literal comprehension and development of inferential interpretation.	Prerequisites: Appropriate reading placement test score or a grade of C or better in ESL/RDG046 or permission of Instructor.	LEC 3.0 3.0 3.0
RDG079	Vocabulary Improvement	Systematic methods of increasing vocabulary by emphasizing the most important affixes, Latin, and Greek roots. Content analysis techniques. Common foreign words and phrases used in English. Specialized vocabularies of areas of study and interest. Interpretation of information in dictionary entries. Examination of words frequently confused and misused. College preparatory level	Prerequisites: None.	LEC 2.0 2.0 2.0
RDG081	Reading Improvement	Designed to improve basic reading skills. Includes word recognition, interdisciplinary vocabulary development, recognizing patterns of organization, interpreting inference. Reviews interpreting graphic materials. Emphasis on identifying main ideas and related details.	Prerequisites: Appropriate reading placement test score or a grade of C or better in RDG071 or permission of Instructor.	LEC 3.0 3.0 3.0
RDG081AC	Reading Fundamentals Applications	Continues students' expansion of vocabulary through the use of additional vocabulary improvement. Expands identification of main ideas and related details to longer reading selections. Reviews the following or written directions and the understanding of graphic materials.	Prerequisites: Placement test scores or permission of Instructor.	LEC 1.0 1.0 1.0



RDG085	Adult Reading Skills for the Workplace	Small cooperative group settings used to discuss readings to enhance comprehension, oral communication, and problem solving skills. Emphasis on reading and thinking skills as applied to overall job performance. Using context clues, constructing graphs, following written directions, using diagrams and flow charts, locating main ideas, recognizing cause and effect, and identifying logical order in written text	Appropriate score on placement test.	LEC 1.0 1.0 1.0
RDG086	Problem Solving and Reading in the Workplace	Small cooperative group setting used to discuss readings to enhance comprehension, oral communication, and problem solving skills. Emphasis on evaluative reading and thinking skills as applied to overall job performance. Previewing; determining main points and purpose of general and work-related materials; interpreting charts and graphs.	Prerequisites: Appropriate score on placement test or a grade of C or better in RDG085.	LEC 1.0 1.0 1.0
RDG095	Intensive Foundations for College Reading	Accelerated format to improve basic reading skills, study skills, and information literacy skills including vocabulary development, main idea identification, patterns of organization recognition, and comprehension improvement.	Prerequisites: Appropriate reading placement test score or a grade of B or better in RDG071 or permission of Instructor.	LEC 6.0 6.0 6.0
RDG100	Successful College Reading	Emphasis on reading study strategies for any introductory class in any subject area. Introduction to Learning Management System (LMS), how to successfully read course textbooks and assessments, how to navigate information technology and development of academic vocabulary.	Prerequisites: A grade of C or better in ALT100 or RDG081 or appropriate reading placement or permission of Instructor. Corequisites: Any 100-level course in another content area or permission of Instructor.	LEC 3.0 3.0 3.0

RDG100AA	Successful College Reading - Organizing for Success	Includes goal setting, time management, college orientation, reading content materials. Emphasis on organizational skills and strategies for any introductory class in any subject area. Introduction to Learning Management System (LMS), how to organize and manage college reading assignments, and how to navigate information literacy using campus resources.	Prerequisites: A grade of C or better in RDG081 or appropriate reading placement score or permission of Instructor. Corequisites: Any 100-level course in another content area or permission of Instructor.	LEC 1.0 1.0 1.0
RDG100AB	Successful College Reading - Notetaking and Studying for Success	Emphasis on reading study and notetaking techniques applicable to any introductory class in any subject area. Includes effective use of textbooks, notetaking, and development of academic vocabulary.	Prerequisites: A grade of C or better in RDG081 or appropriate reading placement score or permission of Instructor. Corequisites: Any 100-level course in another content area or permission of Instructor.	LEC 1.0 1.0 1.0
RDG100AC	Successful College Reading - Taking College Exams with Success	Emphasis on successful lecture notetaking and synthesis of information, studying skills and strategies, types of exams, and exam taking strategies for success in any college introductory class.	Prerequisites: A grade of C or better in RDG081 or appropriate reading placement score or permission of Instructor. Corequisites: Any 100-level course in another content area or permission of Instructor.	LEC 1.0 1.0 1.0
RDG100LL	Disciplinary Literacy Lab	Supplemental instruction for college-level discipline courses. Focus on developing effective reading processes to address a range of literacy needs including reading, writing, digital, numerical, financial and informational literacies.	Prerequisites: None. Corequisites: Any 100-level course in another content area or permission of Instructor.	LAB 1.0 3.0 3.0
RDG111	Successful College Reading for Cultural or Social Sciences	Emphasis on reading study strategies for an introductory class in the Cultural and Social Sciences. Introduction to Learning Management System (LMS), how to successfully read course textbook and assessments and development of academic vocabulary.	Prerequisites: A grade of C or better in ALT100 or RDG081 or appropriate reading placement score or permission of Instructor. Corequisites: Any 100-level course in Cultural Science or Social Science area or permission of Instructor.	LEC 3.0 3.0 3.0

RDG112	Successful College Reading for Life Sciences, Mathematics, Physical Sciences or Technology	Emphasis on reading study strategies for an introductory class in the Life Science, Mathematics, Physical Sciences, or Technology. Introduction to Learning Management System (LMS), how to successfully read course textbook and assessments and development of academic vocabulary.	Prerequisites: A grade of C or better in ALT100 or RDG081 or appropriate reading placement or permission of Instructor. Corequisites: Any 100-level class in the Life Sciences or Mathematics or Physical Sciences or Technology or permission of Instructor.	LEC 3.0 3.0 3.0
RDG113	Successful College Reading for Communication, Humanities or Behavioral Science	Emphasis on reading study strategies for an introductory class in the Communication, Humanities, or Behavioral Science. Introduction to Learning Management System (LMS), how to successfully read course textbook and assessments and development of academic vocabulary.	Prerequisites: A grade of C or better in ALT100 or RDG081 or appropriate reading placement or permission of Instructor. Corequisites: Any 100-level course in Communication or Humanities or Behavioral Sciences or permission of Instructor.	LEC 3.0 3.0 3.0
RDG282AA	Service-Learning Experience in Reading	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
RDG282AB	Service-Learning Experience in Reading	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
RDG282AC	Service-Learning Experience in Reading	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
RDG296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

RDG296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
RDG296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
RDG296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

RDG298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
RDG298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
RDG298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
REA150	Supervisory Appraiser/Appraiser Trainee	Examine the national minimum requirements, responsibilities, and expectations for Trainee Appraisers and Supervisory Appraisers that are included in the Appraiser Qualifications Board (AQB) Criteria.	Prerequisites: None.	LEC 1.0 1.0 1.0

REA179	Real Estate Principles I	Basics of real estate principles including introduction to the profession and license law, definition of real property, legal descriptions, rights and interests in property, ownership, contracts, real estate economics, financing and foreclosure, land use, and valuation	Prerequisites: None.	LEC 3.0 3.0 3.0
REA180	Real Estate Principles II	Advanced work in real estate including escrow procedures and title insurance, liens and encumbrances, advanced contracts, water rights, toxic waste and environmental hazards, agency, ethics and professional relationships, real estate code and the Commissioner's rules, investment, property management, and government restrictions.	Prerequisites: None.	LEC 3.0 3.0 3.0
REA201	Real Estate Principles I and II	Comprehensive survey of real estate principles to include careers in real estate, nature and description of real estate, rights and interests in land, forms of real property ownership, forms of business organization, methods of title transfer, title search and insurance, contract law, real estate sales contracts, mortgage and notes payable, deeds of trust, lending practices, loans and consumer rights, sources of financing real estate loans, types of financing instruments, real property taxes and assessments, title closing, escrow and settlement procedures, property management and real estate leases, real estate appraisal, state licensing laws and professional affiliations, real estate brokerage, real estate agency, fair housing and equal credit laws, types of residential real estate, real property insurance, land use control, economics of real estate, and investment considerations.	Prerequisites: None.	LEC 6.0 6.0 6.0

REA270	Basic Appraisal Principles	Overview of real property concepts and characteristics, legal considerations, value influences, real estate finance, types of value, economic principles, real estate markets and analysis, and ethics in appraisal practice	Prerequisites: None.	LEC 2.0 2.0 2.0
REA271	Basic Appraisal Procedures	Overview of real estate appraisal approaches to valuation procedures, value, property description, residential applications, commercial applications, improvement construction, home inspection, and appraisal math. Practical application of appraisal procedures including case studies, and examples	Prerequisites: A grade of C or better in REA270 or permission of Instructor.	LEC 2.0 2.0 2.0
REA272	Uniform Standards of Professional Appraisal Practice (USPAP)	Basic rules for ethical behavior and competent performance. USPAP requirements for state certified appraisers. Highlights role of the appraiser and implied impartiality of this role. Requirements of the Uniform Standards of Professional Appraisal Practice (USPAP) affect appraisal businesses.	Prerequisites: None.	LEC 1.0 2.0 1.7
REA273	Residential Market Analysis Highest and Best Use	Recognize and evaluate market conditions affecting the buyers' and sellers' activities in understanding and reporting values. Gather and evaluate market data. Markets, sub-markets, market segmentation, supply side analysis, demand analysis and the importance of market examination to the appraisal process	Prerequisites: None.	LEC 1.0 1.0 1.0
REA274	Residential Appraiser Site Valuation and Cost Approach	Learn theories and methodologies for arriving at residential site values and applying the Cost Approach for new and reproduction factors. The advantages and disadvantages of using the cost methods for estimating accrued depreciation. Reading of residential building plans and specifications	Prerequisites: None.	LEC 1.0 1.0 1.0

REA275	Residential Sales Comparison and Income Approaches	Basic understanding and knowledge of the residential sales comparison and income approaches to appraisal including valuation principles and procedures applicable to these approaches. Development of market analysis, including the application and use of matched pairs and capitalization rates, and gross rent multipliers. Includes organizing market data and reconciling value indications.	Prerequisites: None.	LEC 2.0 2.0 2.0
REA276AA	Residential Report Writing and Case Studies I	Exposes appraiser to realistic writing skills essential to producing realistic appraisal reports in their practice. Includes study of writing techniques, grammar, punctuation, and analytical techniques. Actual report writing and case studies are applied	Prerequisites: None.	LEC 1.0 1.0 1.0
REA281	Principles of Real Estate Law	Incidents of ownership and use of real estate, legal principles, procedures, and methods of acquisition and disposition of real estate	Prerequisites: A grade of C or better in REA179 or permission of Department or Division.	LEC 3.0 3.0 3.0
REA282	Real Estate Finance	Study of lending institutions, including banks, savings and loans, conventional loans, Federal Housing Administration (FHA), Veterans Administration (VA) for residential, commercial and industrial property	Prerequisites: A grade of C or better in REA179 or permission of Instructor.	LEC 3.0 3.0 3.0
REA283	Property Management	Emphasizes realty laws, survey of rentals, housing needs, and rents in Phoenix metropolitan area	Prerequisites: A grade of C or better in REA179 or permission of Instructor.	LEC 3.0 3.0 3.0
REA290AH	Real Estate Seminar: Contract Writing	Contract writing skills, techniques, and requirements. Writing of basic real estate contracts, including purchase offers, counter offers, sales listing agreements, and riders	Prerequisites: None.	LEC 0.5 0.5 0.5



REC120	Leisure and the Quality of Life	Overview of the historical, psychological, social, and cultural aspects of play, leisure, and recreation and their role in contemporary society. Nature of play and leisure behavior in human development within different cultures and the contribution play, recreation, and leisure make to the quality of life for individuals in today's society.	Prerequisites: None.	LEC 3.0 3.0 3.0
REC132	Landscape Management	Identification of plants commonly used in Arizona landscaping. Includes trees, shrubs, vines, flowers, and ground covers. Techniques for planting, watering, and fertilizing recreational grounds. Pest control planning	Prerequisites: None.	L+L 2.0 3.0 3.0
REC134	Irrigation and Water Management	Irrigation and water management systems used on recreational grounds. Installation and repairs of sprinklers, valves, piping, electrical systems, and pumps	Prerequisites: None.	L+L 2.0 3.0 3.0
REC137	Turfgrass Management	Identification of turfgrasses used in the Southwest. Establishment and maintenance of turfgrasses on recreational grounds	Prerequisites: None.	L+L 2.0 3.0 3.0
REC139	Pro Shop Merchandising	Focus on principles of merchandising related to a pro shop. Includes components of display and visual presentation of merchandise	Prerequisites: None.	LEC 1.0 1.0 1.0
REC150AA	Outdoor Adventure Skills Field Experience	Practical application of camping and outdoor skills including camping, equipment selection and use, cooking, fire building, camp programs, backpacking, and safety.	Prerequisites: None.	LAB 1.0 2.0 2.0
REC150AB	Outdoor Adventure Skills	Camping and outdoor skills including types of camping, equipment selection and use, cooking and fire building, camp programs, backpacking, and safety	Prerequisites: None.	LEC 3.0 3.0 3.0

REC155AA	Canyoneering	Basic canyoneering skills. Includes hydrology, navigation, safety systems, climbing and hiking skills, wading/swimming techniques and flood/weather identification	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AB	Caving	Basic caving skills. Includes cave ecology, navigation, safety systems, lighting systems and equipment selection	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AC	Outdoor Rock Climbing	Basic outdoor rock climbing skills. Includes belaying, climbing techniques, rope systems and anchor systems	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AD	Rowing	Basic rowing skills for a four or eight person shell. Includes physical conditioning, rowing etiquette and safety, boat handling, proper rowing techniques, and teamwork	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AE	Indoor Rock Climbing	Basic indoor rock climbing skills. Includes belaying, climbing techniques, rope systems, anchor systems and safety	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AF	Backpacking	Covers basic skills and techniques of backpacking and the application of these to wilderness travel	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AG	Hiking	Development of safe and enjoyable hiking skills. Essentials and requirements for safe hiking	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AH	Mountain Biking	Covers basic skills and techniques for mountain biking and the application of these skills as a recreational lifetime activity. Includes bicycle riding and maintenance techniques, trail etiquette, and safety considerations.	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AI	Outdoor Cooking	Covers the planning and preparation of delicious meals in various outdoor settings. Presents the use of the Dutch oven and mini stove and methods of cooking over a campfire.	Prerequisites: None.	L+L 1.0 2.0 2.0

REC155AJ	Outdoor Survival	Introduction to and practice of essential skills needed for procuring shelter, water and fire in a wilderness environment.	Prerequisites: None.	L+L 1.0 2.0 2.0
REC155AK	Leave No Trace Trainer Certification	Emphasis on seven (7) Leave No Trace principles. Skills needed to effectively teach and demonstrate minimum impact techniques and outdoor ethics.	Prerequisites: Permission of Instructor.	L+L 1.0 2.0 2.0
REC210	Leisure Delivery Systems	Systematic study of Delivery of Leisure Services in public, commercial, and independent sectors; particular emphasis placed on the urban setting	Prerequisites: None.	LEC 3.0 3.0 3.0
REC230	Programming of Recreation Services	Foundations for designing, planning, delivering and managing recreational and leisure events. Emphasis on application of recreation programming concepts and practices in a variety of settings and situations for a diversity of participants.	Prerequisites: None.	LEC 3.0 3.0 3.0
REC240	Wilderness First Responder	Introduces and provides practical training in the essentials of medical assistance in backcountry emergencies. Includes patient assessment, first aid for trauma victims, and treatment of other medical emergencies	Prerequisites: None.	L+L 3.0 6.0 6.0
REC250	Recreation Leadership	An examination of roles and methods of leadership in leisure services settings. Overview of theories and models of leadership, group dynamics, participant motivation, communication, and face-to-face leadership. Exploration of leadership contexts, including coaching and officiating sports, leading community groups and volunteers, working with persons in various life stages and with varying abilities, and leading different recreation activity areas	Prerequisites: None.	LEC 3.0 3.0 3.0

REC260	Experience in Recreation	Supervised participation in a leadership capacity in a selected recreation service delivery system. Involves direct contact leadership consisting of planning, organizing, scheduling, and conducting recreational activities for clientele groups representative of the agency or company's constituency. Requires a minimum of 40 hours of work over at least a six-week period	Prerequisites: A grade of C or better in REC250 or Corequisites: REC250.	L+L 1.0 2.0 2.0
REC271AC	Recreational Resources and Facilities Management Internship	Work experience in a recreational resources and facilities setting. Fifteen (15) hours of work weekly. Supervision and evaluation by internship coordinator.	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 0.0
REC282AA	Volunteerism for Recreation: A Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
REC282AB	Volunteerism for Recreation: A Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
REC282AC	Volunteerism for Recreation: A Service Learning Experience	Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
REC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

REC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
REC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
REC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

REC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
REC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
REC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
REL100	World Religions	The development of various religions from the prehistoric to modern times. Political, economic, social and geographic relationships among world religions. Consideration of both Eastern and Western religions.	Prerequisites: None.	LEC 3.0 3.0 3.0

REL101	Introduction to Religion	Various religious expressions of humankind. Focuses on basic religious themes common to religions, such as encounter with the Holy, search for self and community, mystical illumination, spiritual discipline	Prerequisites: None.	LEC 3.0 3.0 3.0
REL151	Religion in the Hispanic World	Survey of various religious traditions within Spain and the Spanish-settled world. Considers the impact of and impact on both major world religions and indigenous traditions.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL200	Religion and Film	A course examining the relationships between religion and film, with particular attention to representations of religious beliefs, institutions, and practices in film and their reception by various audiences.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL201	Classics of Western Religions	Academic study of the scriptures of Judaism, Christianity and Islam, and works from later phases of these religious traditions.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL202	Classics of Asian Religions	Academic study of selected works from Hindu, Buddhist, Taoist and Confucian traditions. Study of cultural and concepts of the world, history, culture, and human nature as represented in these works.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL203	American Indian Religions	An examination of the historical and cultural background of diverse lifeways and worldviews belonging to the peoples indigenous to the North American continent over time, including a study of modern day American Indian beliefs and practices.	Prerequisites: A grade of C or better in ENG101, or ENG107, or equivalent.	LEC 3.0 3.0 3.0
REL205	Religion and the Modern World	Introduction to the nature and role of religious beliefs and practices in shaping the lives of individuals and societies, with particular attention to the modern world	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0

REL206	Religion in America	Introduction of the rich tapestry of religious traditions and movements that have helped to shape the United States of America. Investigate how religion has impacted American culture and institutions, and how the United States has in turn transformed long-standing religious traditions.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL207	Ritual, Symbol, and Myth	Introduction to the academic study of religion through the study of myths, symbols, and rituals. Includes methods and theories used by scholars to study the complex subject of religion. Attention to literate and nonliterate cultures.	Prerequisites: A grade of C or better in ENG101 or ENG107 or permission of Department or Division.	LEC 3.0 3.0 3.0
REL210	Introduction to Judaism	Introduction to the history, scriptures, practices and impact of Judaism.	Prerequisites: A grade of C or better in ENG101 or ENG107 or permission of Department or Division.	LEC 3.0 3.0 3.0
REL211	Introduction to the Old Testament (Hebrew Bible)	The historical context, development, canonization, historical transmission, translation and interpretation of the Hebrew Bible.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL212	Introduction to Islam	Introduction to History, scriptures, practices and impact of Islam.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL213	Introduction to the Qur'an	Historical context, development, canonization, historical transmission, translation and Interpretation of the Qur'an.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL214	Introduction to Mormonism (The Church of Jesus Christ of Latter-day Saints)	History, scriptures, doctrines, and organization of the Church of Jesus Christ of Latter-day Saints as a modern American religious movement	Prerequisites: None.	LEC 3.0 3.0 3.0
REL218	Religion and Culture	Examination of the relationship between religion and culture, with a particular emphasis on how culture influences religion and how religion influences culture historically and in modern settings	Prerequisites: None.	LEC 3.0 3.0 3.0



REL223	Spiritual But Not Religious	Explore the historical, social, and cultural context for the emergence of spiritual but not religious segment, and examine who identifies with this movement and why. Identify what variety of attitudes and beliefs this group holds, and explore the varieties of private and public spiritual practices and civic engagement this group participates in	Prerequisites: None.	LEC 3.0 3.0 3.0
REL225	African-American Religions	Leaders, movements, traditions, and controversies in the religious history of African-Americans	Prerequisites: None.	LEC 3.0 3.0 3.0
REL230	Religions Of Indigenous Peoples	Sacred story as experienced in ritual and daily practice of various contemporary groups, such as African, Native American, Native Australian, Native South American, Icelandic and Japanese. Power of sacred story to create and re-create religious and social perspectives	Prerequisites: None.	LEC 3.0 3.0 3.0
REL240	Religion and Science	Consideration of the relationship of religion and science from the beginnings of the historical period to the present. Includes consideration of various contemporary religious perspectives on current scientific issues	Prerequisites: None.	LEC 3.0 3.0 3.0
REL244	Philosophy of Religion	Religious language, the existence of God, miracles, and human destiny	Prerequisites: None.	LEC 3.0 3.0 3.0
REL245	Eco Religion	Consideration of the perspectives of various religious traditions toward the origins, destiny and value of the earth and its non-human life. Includes exploration of contemporary issues in the interaction of humans with the environment	Prerequisites: None.	LEC 3.0 3.0 3.0

REL248	Religion, Peace and Violence	Exploration of the understandings and attitudes toward peace, war and violence in religious traditions from the pre-historical to the present. Includes consideration of a variety of religious scripture traditions, theological and philosophical reflections, and religious symbolism.	Prerequisites: A grade of C or better in ENG101, or ENG107, or permission of Instructor.	LEC 3.0 3.0 3.0
REL250	Religion in Ireland: Neolithic to Early Medieval	Survey of the Ancient religious traditions of Ireland. Students investigate the beliefs and practices of Irish Religions in the context of their social, economical and political systems from the late Neolithic to the early Medieval periods (4000 BCE-700 CE).	Prerequisites: None.	LEC 3.0 3.0 3.0
REL251	History of Religion in Ireland: Medieval to Modern	Development of Christianity in Ireland from 400 AD to present, focusing on political, economic, social, and cultural factors.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL270	Introduction to Christianity	The nature and content of the Christian tradition developed over time, with overview of the New Testament, major historical trends and figures, major Christian ideas and practices, and survey of denominations.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL271	Introduction to the New Testament	Focuses on the origins, development, and selection of the New Testament (NT) books in the Christian religion. Includes authorship, historical reliability, translation and transmission over the centuries, and investigative techniques used by modern scholars. Also considers the varieties of literature contained in the NT, its portrayal of the status of women, and the influence of first-century religious and cultural worldviews on its development.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL277	Mysticism East and West	Mystical traditions of Eastern and Western religions, including Hinduism, Buddhism, Judaism, Christianity, and Islam, as well as shamanism of oral traditions	Prerequisites: None.	LEC 3.0 3.0 3.0

REL282AA	Service Learning Experience in Religious Studies	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in REL100 or permission of Instructor.	LAB 1.0 1.0 0.0
REL282AB	Service Learning Experience in Religious Studies	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in REL100 or permission of Instructor.	LAB 2.0 2.0 0.0
REL282AC	Service Learning Experience in Religious Studies	Service learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: A grade of C or better in REL100 or permission of Instructor.	LAB 3.0 3.0 0.0
REL290	Women and World Religions	Focus on the role of women in several organized religions and/or religious sects. Study of myth and symbols as they are used to establish, maintain, and enforce sex-roles within specific cultural contexts around the world.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL291	Religion and Sexuality	Exploration of the perspectives of various religious traditions on human sexuality. Includes consideration of all aspects of sexual practice as well as its incorporation into religious discourse and practice and its impact on social norms and structures.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL292	Goddess Religions	Introduction to Goddess religions from pre-historic to modern times. Focuses on ancient origins, myths and practices of religions with female deities, their historical replacement by male religious deities, and their modern re-emergence in neo-Goddess movements.	Prerequisites: None.	LEC 3.0 3.0 3.0
REL294	Religion in Community Service	Consideration of the history and nature of the involvement of religious tradition in transformative social action. Incorporates student involvement in some dimension of community service with subsequent integrative classroom activities.	Prerequisites: None.	LEC 3.0 3.0 3.0

REL295	Capstone: The Story of Belief	Analysis of both the process and results of human belief, in various stages of the human experience. Incorporates materials from multiple disciplines to form an overarching narrative that integrates the variations of human belief	A grade of C or better in any four (4) REL courses.	LEC 3.0 3.0 3.0
REL296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
REL296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

REL296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
REL296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
REL298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

REL298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
REL298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
RES109	CPR for Health Care Provider	Current American Heart Association standards for one and two rescuer cardiopulmonary resuscitation (CPR) and obstructed airway procedures on the adult, infant, and pediatric victim. Use of automatic, external defibrillation and resuscitation equipment	Prerequisites: None.	LEC 0.5 0.5 0.5
RES118	Vascular Access in Respiratory Care Practice,	Scope of practice and regulations governing vascular access. Anatomy and physiology of the vascular system. Occupational Safety and Health Administration (OSHA) guidelines. Theory and practice of vascular access as designated by Infusion Nursing Standards (INS).	Prerequisites: None. Corequisites: RES130 or permission from the Program Director.	L+L 0.5 1.5 1.5

RES130	Respiratory Care Fundamentals I	Review of existing clinical data and recommendations. Data required to determine appropriateness of prescribed respiratory care plan. Administration of basic respiratory care therapeutics to include medical gas administration, oxygen therapy administration, and humidity/aerosol therapy administration. Use and maintenance of select respiratory equipment. Use of communication skills during interactions with members of the health care team and patients. Ethical, legal and professional work behaviors.	Prerequisites: Admission into the Respiratory Care program.	LEC 4.5 3.0 3.0 LAB 0.0 5.0 5.0
RES131	Infection Control for Respiratory Care	Techniques and procedures used by Respiratory Therapist to clean and sterilize equipment and environments, and prevent the transmission of nosocomial and other healthcare related infections.	Prerequisites: Admission into the Respiratory Care program or admission into the Polysomnographic Technology program.	LEC 1.0 1.0 1.0
RES133	Respiratory Care Clinical Seminar	Clinical application of concurrent respiratory care course work with emphasis on professionalism, medical record evaluation, communication, universal precaution, infection control, patient safety, patient assessment, age related care, cultural competence, routine hospital regulations, patient education and introduction to respiratory disease and treatment	Prerequisites: Admission into the Respiratory Care program.	LEC 2.0 2.0 2.0
RES134	Respiratory Care Pharmacology I	Pharmacologic principles related to the treatment of acute and chronic pulmonary diseases. Information on mucokinetics, anti-inflammatory, antiasthmatic and anti-infective agents to include mechanism of action, general drug information, side effects, and respiratory care considerations.	Prerequisites: Admission into the Respiratory Care program or permission of the Program Director.	LEC 2.0 2.0 2.0

RES136	Applied Biophysics for Respiratory Care	Physical principles specific to ventilation. Laws of physics and their relationship to the respiratory system and the application of respiratory care equipment. Role of respiratory care during specific diagnostic procedures. Use of mathematical formulae	Admission into the Respiratory Care program.	LEC 3.0 3.0 3.0
RES140	Respiratory Care Fundamentals II	Continuation of basic respiratory care procedures to include patient assessment and monitoring, chest physiotherapy techniques and pulmonary rehabilitation. Hyperinflation therapy, airway management and introduction to mechanical ventilation. Equipment operation, quality assurance and maintenance. Use of communications skills during interactions with health care team members and patients. Ethical, legal and professional work behaviors.	Prerequisites: Admission into the Respiratory Care program.	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0
RES142	Respiratory Care Clinical I	Clinical application of all prerequisite respiratory care course work with emphasis on adult critical care and neonatal/pediatric. Performance of general floor and critical care procedures. Advanced patient assessment and monitoring	Prerequisites: Admission into the Respiratory Care program.	LAB 4.0 27.0 0.0
RES144	Introduction to Mechanical Ventilation	Introduction to mechanical ventilation including, technology, impact of the use of technology on patient physiology, and how it affects the oxygenation and ventilation ability of the patient.	Prerequisites: Admission into the Respiratory Care program.	LEC 1.0 1.0 1.0
RES220	Respiratory Care Fundamentals III	Advanced respiratory care therapy and assessment techniques to include ventilator setup and management. Diagnostic testing specific to assessment of oxygenation and ventilation and specific respiratory care procedures utilized in critical care.	Prerequisites: Admission into the Respiratory Care program.	LEC 4.5 3.0 3.0 LAB 0.0 5.0 5.0



RES222	Cardiopulmonary Resuscitation Instructor	Standards of the American Heart Association for Basic Life Support. Procedures and skills for teaching cardiopulmonary resuscitation	Health care provider CPR card.	L+L 1.0 1.0 1.0
RES224	Pathophysiology for Respiratory Care	Causes of disease and their impact on the human body. Common physiologic effects of disease on body systems. Role of the respiratory therapist and the members of a multidisciplinary health care team in the diagnosis and treatment of disease. Cultural implications in prevention and treatment of disease.	Prerequisites: Admission into the Respiratory Care program.	LEC 2.0 2.0 2.0
RES226	Respiratory Care Clinical II	Clinical application of all prerequisite respiratory care course work with emphasis on adult critical care and neonatal/pediatric care. Basic and critical care therapeutics, advanced patient assessment and monitoring. Assisting physician during special procedures. Increased responsibility for total patient care, work organization and time management.	Prerequisites: Admission into the Respiratory Care program.	LAB 4.0 27.0 0.0
RES230	Respiratory Care Fundamentals IV	Advanced respiratory care therapy and assessment techniques to include hemodynamic monitoring, performance and interpretation of pulmonary function testing. Assisting physicians during special procedures. Development of advanced respiratory care plans and clinical research techniques. Equipment operation, quality assurance, and maintenance. Use of effective communication skills with members of the health care team and patients.	Prerequisites: Admission into the Respiratory Care program.	LEC 4.0 3.0 3.0 LAB 0.0 3.0 3.0

RES232	Respiratory Care Clinical III	The study and scientific inquiry of issues and demands placed on business enterprise by owners, customers, government, employees and society. Included are social, ethical and public issues and analysis of the social impact of business responses.	Prerequisites: None.	LEC 3.0 3.0 3.0
RES235	Respiratory Care Pharmacology II	Pharmacologic principles specific to the care of the respiratory patient in the acute care environment to include the following agents: cardiac, renal, blood pressure, antithrombotic, neuromuscular, anesthetic, sedative, and analgesics. Utilization of evidence-based practice in the treatment and care of patients.	Prerequisites: Admission into the Respiratory Care program or permission of the Program Director.	LEC 2.0 2.0 2.0
RES240	Respiratory Physiology	Physiology of the respiratory, cardiovascular and renal systems as related to oxygenation and ventilation of the human body. Physiologic mechanisms of breathing. Role of capillary circulation in fluid regulation. Impact of respiratory care procedures on the organ systems.	Prerequisites: Admission into the Respiratory Care program.	LEC 3.0 3.0 3.0
RES270	Neonatal and Pediatric Respiratory Care	Neonatal and pediatric respiratory care to include development, anatomical and physiological differences, assessment, basic respiratory care procedures, mechanical ventilation and common disorders and conditions. Specific communication skills.	Prerequisites: Admission into the Respiratory Care program or permission of the Program Director.	LEC 2.0 2.0 2.0

RES278	Vascular Access Review	Scope of practice and regulations governing venipuncture and maintenance of vascular devices specific to the vascular access board certification credentialing examination. Anatomy and physiology of the vascular system. Administration and discontinuation of vascular devices based on best practice guidelines. The use of communication skills for different patient populations and among other healthcare providers. Ethical, legal and professional work behaviors.	Prerequisites: Current license in a medical profession or permission of the Program Director.	LEC 2.0 2.0 2.0
RES280	Respiratory Care Review	Data interpretation, equipment operation and therapeutic procedures specified for the National Board for Respiratory Care (NBRC) Registered Respiratory Therapist (RRT) examination. Quality control and therapeutic procedures. Pharmacologic agents and treatment of cardiopulmonary collapse. Pulmonary rehabilitation and home care.	Prerequisites: Admission into the Respiratory Care program or permission of the Program Director.	LEC 2.0 2.0 2.0
RES291	Respiratory Care Advanced Life Support	Airway management for the adult, patient. Endotracheal and suctioning procedures. Usage of specific medications for cardiovascular emergencies. Interpretation of electrocardiogram (ECG) dysrhythmias. Performance of defibrillation and synchronized cardioversion in simulated situations. Procedure to be followed during cardiovascular collapse. Special resuscitation techniques for adult, patients. Current American Heart Association validation in Advanced Cardiac Life Support (ACLS).	Prerequisites: Admission into the Respiratory Care program or permission of the Program Director.	LEC 1.0 1.0 1.0

RES292	Respiratory Care Pediatric Advanced Life Support	Airway management for the pediatric patient. Endotracheal and suctioning procedures. Usage of specific medications for cardiovascular emergencies. Interpretation of electrocardiograms (ECG) dysrhythmias. Performance of defibrillation and synchronized cardioversion in simulated situations. Procedure followed during cardiovascular collapse in the pediatric patient. Special resuscitation techniques for pediatric patients. Current American Heart Association validation in pediatric advanced life support (PALS).	Prerequisites: Admission into the Respiratory Care program or permission from the Program Director.	LEC 1.0 1.0 1.0
RES297	Respiratory Care Seminar	Presentation of case scenarios of various patient type and disease processes. Application of general principles of respiratory care to arrive at clinical solutions.	Prerequisites: Admission into the Respiratory Care program or permission of the Program Director.	LEC 2.0 2.0 2.0
RES298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

RES298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
RES298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
ROF101	Built-Up Roofing I	Roofing including roofing terminology and historical background. Safe use of roofing tools, equipment and materials. Emphasis on built-up roofing procedures and applications	Registered apprentice status or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
ROF102	Built-Up Roofing II	Emphasis on advanced skills in built-up roofing (BUR) installation. BUR products, their manufacturing processes in relationship to installation and handling requirements	Prerequisites: A grade of C or better in ROF101 or permission of apprenticeship coordinator.	LEC 5.0 5.0 5.0
ROF103	Elasto-Plastic Roof Systems	Elasto-plastic roof systems (EPRS). Methods of application and attachment as roofing membranes	Prerequisites: A grade of C or better in ROF102.	LEC 5.0 5.0 5.0
ROF104	Steep Roofing	Steep roofing practices and procedures. Includes asphalt roll material and shingles, wood and asbestos shingles, slate and tile	Prerequisites: A grade of C or better in ROF103.	LEC 5.0 5.0 5.0

ROF105	Single-Ply Roofing	Qualities, advantages, disadvantages, materials and manufactured products for single-ply roofing. Safe work practices. Types of single-ply systems. Installation of single-ply roofing systems. Installation of ethylene propylene diene monomer (EPDM), hot-air weld and modified bitumen roof systems. Detailing. Lining and waterproofing. Maintenance and repair of roof systems	Prerequisites: A grade of C or better in ROF104.	LEC 5.0 5.0 5.0
ROF298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
ROF298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

ROF298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
RPT103	Radiation Fundamentals	Overview of physics and chemistry of radiation and radioactive materials. Basic understanding of radiation and its uses and interactions.	Prerequisites: A grade of C or better in college-level math course, or appropriate District placement, or permission of Department/Division Chair.	LEC 3.0 3.0 3.0
RPT113	Radiation Monitoring	Monitoring radiation with a focus on theory and operation of radiation monitors and the evaluation of radioactive hazards	Prerequisites: A grade of C or better in RPT103 or permission of Instructor.	LEC 3.0 3.0 3.0
RPT223	Radiation Dosimetry	Assessing internal and external exposure of personnel to ionizing radiation.	Prerequisites: A grade of C or better in RPT113 or Corequisites: RPT113 or permission of Instructor.	LEC 3.0 3.0 3.0
RPT233	Radioactive Materials Handling	Presents scenarios in which Radiation Protection Technicians are required to provide safe control, movement, use, storage, transportation and disposal of radioactive materials	Prerequisites: A grade of C or better in RPT223 or permission of Instructor.	LEC 3.0 3.0 3.0
RPT243	Radiological Safety and Response	Conceptual understanding and skills for ensuring and maintaining safety in the use of radioactive materials, with an emphasis on implementing ALARA (As Low as Reasonably Achievable) principles. Concepts of time, distance and shielding, and protective clothing to minimize dose in a variety of situations (both routine and off-normal) within radiological environments.	Prerequisites: A grade of C or better in RPT233 or Corequisites: RPT233 or permission of Instructor.	LEC 3.0 3.0 3.0

RPT253	Radiation Protection	Practical application of radiation protection principles and sources of radiation such as nuclear power plant, medical, and industrial operations	Prerequisites: A grade of C or better in RPT243 or permission of Instructor.	LEC 3.0 3.0 3.0
RPT290	Radiation Protection Internship	Provides approximately 320 hours with an industry, governmental, or educational institution that uses radioactive materials to allow students an opportunity for a hands-on practical application of radiation protection principles	Prerequisites: A grade of C or better in RPT233 or permission of Instructor.	LAB 5.0 25.0 0.0
RUS095	Speak Russian I	Limited vocabulary and grammar to help develop fluency in Russian. Emphasis on speaking skills	Prerequisites: None.	LEC 1.0 1.0 1.0
RUS101	Elementary Russian I	Basic grammar, pronunciation, and vocabulary of the Russian language. Practice of listening, speaking, reading, and writing skills	Prerequisites: None.	LEC 4.0 4.0 4.0
RUS102	Elementary Russian II	Continued study of grammar and vocabulary, with emphasis on speaking, reading, and writing skills.	Prerequisites: A grade of C or better in RUS101 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
RUS115	Beginning Russian Conversation I	Basic sentence structure, pronunciation and vocabulary necessary to develop speaking ability in Russian	Prerequisites: None.	LEC 3.0 3.0 3.0
RUS201	Intermediate Russian	A continuation of RUS102. Review of essential grammar and continued practice and development of reading, writing, and speaking skills.	Prerequisites: A grade of C or better in RUS102 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
RUS202	Intermediate Russian	Continued development of Russian language skills.	Prerequisites: A grade of C or better in RUS201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0



RUS296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
RUS296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
RUS296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

RUS296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
RUS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
RUS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

RUS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
SBS200	Small Business Operations	In-depth analysis of and individual plan development for the "day-to-day" problems encountered in the operation of a small business. Includes the development of an individual business operations plan including finance, purchasing, production scheduling, maintenance, shipping/receiving, personnel management and insurance/risk management requirements. Investigation of daily problems related to inventory control and business expansion	Prerequisites: None.	LEC 2.0 2.0 2.0
SBS202	Small Business Bookkeeping and Tax Preparation	Introduces accounting and record-keeping with emphasis on practical use of financial data for the successful management of a small business. Develops an understanding of the accounting cycle and preparation of financial statements. Includes section on tax consequences and preparation for small business owners. Designed for the non-financially oriented owner/manager of a small business	Prerequisites: None.	LEC 1.0 1.0 1.0

SBS203	Financing and Cash Management For a Small Business	Planning for and meeting the financial needs of the small business including cash flow planning, identification of financial needs and sources, equity and debt financing, and preparation of loan packages. Participants complete a financial plan for their individual company, with emphasis on cost controls, sales revenue projection, expense allocation, and inventory cost control. Day-to-day operational budgeting also included	Prerequisites: None.	LEC 1.0 1.0 1.0
SBS204	Small Business Marketing and Advertising	Introduction to marketing and advertising strategies and methods including business image, target market analysis, and customer buying behavior profile. Analysis and selection of advertising/business promotion methods and timing. Methods of deciding product and market segment focus included. Design of an individual marketing and advertising/promotion plan	Prerequisites: None.	LEC 2.0 2.0 2.0
SBS210	Tax Planning and Preparation	Explores the areas of tax planning and preparation essential to small business operation. Includes tax requirements and forms, special tax topics affecting business decisions, tax planning techniques, and common tax problems for the small business	Prerequisites: None.	LEC 1.0 1.0 1.0

SBS213	Hiring and Managing Employees	Methods and techniques for managing employees in a small business. Includes supervisor's role, leadership styles, interpersonal communications, staff planning, employee work styles, techniques for handling problem employees, and employee motivation. Focuses on real life situations to enable the business owner to gain high performance from their employee team. Includes segment on hiring, new employee orientation, training, benefits, and developing future staffing needs assessment	Prerequisites: None.	LEC 1.0 1.0 1.0
SBS214	Small Business Customer Relations	Developing and improving customer relations for the small business. Planning and delivering quality customer service. Includes topics on attitude of employees, customer perceptions and motivations, handling customer dissatisfaction, and developing customer, supplier, vendor, and distributor loyalty	Prerequisites: None.	LEC 1.0 1.0 1.0
SBS215	Managing Stress in Small Business	Explores the common causes of stress related to the operation of a small business. Includes discussion of the physiological and psychological effects of stress, and specific methods for dealing with the small business owner or manager stresses in business and personal life	Prerequisites: None.	LEC 1.0 1.0 1.0
SBS216	Planning for a Small Business	Relates business management issues to a specific small business through development of an individual study plan. Provides on-site review of business operation by trained instructor.	Prerequisites: A grade of C or better in (SBS200 and SBS204) or SBS220 or permission of Instructor.	LEC 2.0 2.0 2.0

SBS217	Starting/Managing a Home Business	Analysis of the successful operation of a home-based business. Includes study of economic feasibility, practicality, and adjustments for the family. Analysis of the advantages/disadvantages of operating a home based business, versus a "store-front" business. Review of current trends in home business opportunities and franchises. Descriptions of home businesses that have succeeded in local, national, and international markets	Prerequisites: None.	LEC 1.0 1.0 1.0
SBS218	Establishing an Import/Export Business	Basic marketing and management techniques for exporting and importing. Includes researching viability of an import/export business, marketing an export or securing a product for import, and implementing the transaction	Prerequisites: None.	LEC 1.0 1.0 1.0
SBS220	Internet Marketing for Small Business	Focuses on "e-Commerce"-doing business on the Internet and planning a web site. Topics include: how the Internet can help growth and success of business; examples of successful marketing on the Internet; availability of Internet services; necessary hardware and software for marketing on the Internet; determining products/services appropriate for Internet marketing; budget constraints and on-going operations of the Internet site	Prerequisites: None.	LEC 2.0 2.0 2.0

SBS221	Social Media Marketing for Small Business	Focuses on use of Social Media for Small Businesses and Entrepreneurs. Topics include: Use of Social Media, types of Social Media, how Social Media can help growth and success of business; examples of successful Social Media marketing, setting up and deploying various types of Social Media. Options for hardware and software for Social Media, determining products/services appropriate for Social Media, Monetization of Social Media. Budget constraints and on-going monitoring and content management of Social Media.	Prerequisites: None.	LEC 2.0 2.0 2.0
SBS230	Financial and Tax Management for Small Business	An overview of accounting and record-keeping for the successful management of a small business. Develops an understanding of the accounting cycle and preparation of financial statements. Includes section on tax consequences and the choice of legal entity choice based on taxation	Prerequisites: None.	LEC 2.0 2.0 2.0
SBS290AA	Developing a Practical Small Business Plan	Practical techniques for developing, writing, and implementing a business plan. Designed for the small business owner or manager.	Prerequisites: None.	LEC 0.5 0.5 0.5
SBS290AC	Developing a Practical Marketing Plan for a Small Business	Developing a statement of marketing direction and a related marketing plan. Designed for the small business owner or manager	Prerequisites: None.	LEC 0.5 0.5 0.5

SBS298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
SBS298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SBS298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0



SBU200	Society and Business	The study and scientific inquiry of issues and demands placed on business enterprise by owners, customers, government, employees and society. Included are social, ethical and public issues and analysis of the social impact of business responses	Prerequisites: None.	LEC 3.0 3.0 3.0
SCT100	Introduction to Sustainable Built Environments	Study of the built environment and implications on human health, the natural environment, and society. Understanding of strategies that achieve sustainable design. Exploration of positive and negative sustainable product attributes. Emphasis on Leadership in Energy and Environmental Design (LEED).	Prerequisites: None.	LEC 3.0 3.0 3.0
SCT271AA	Sustainable Design Internship	Sustainable design work experience in the built environment industry. Required to work 80 hours. Supervised and evaluated by a faculty coordinator.	Prerequisites: Permission of Instructor.	LAB 1.0 5.0 0.0
SCT271AB	Sustainable Design Internship	Sustainable design work experience in the built environment industry. Required to work 160 hours. Supervised and evaluated by a faculty coordinator.	Prerequisites: Permission of Instructor.	LAB 2.0 10.0 0.0
SEM104AA	Secondary Basic Emergency Medical Technology: Patient Assessment	Techniques of emergency medical care in accordance with national and state curriculum. Study of patient assessment.	Prerequisites: Current enrollment in the Phoenix Union High School District Current CPR (Cardiopulmonary Resuscitation) certification from the American Heart Association American Red Cross or other equivalent organization at the Healthcare Provider level meeting the American Heart Association Guidelines 2002 Proof of TB testing or chest x-ray with a negative result within 6 months prior to enrollment.	L+L 0.5 0.75 0.75

SEM104AB	Secondary Basic Emergency Medical Technology: Basic Life Support and Airway Management	Techniques of emergency medical care in accordance with national and state curriculum. Study of the use of mechanical aids for breathing and circulation, administration of oxygen, and techniques of basic life support (BLS)	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AA with a grade of C or better.	L+L 0.5 0.75 0.75
SEM104AC	Secondary Basic Emergency Medical Technology: Soft Tissue and Environmental Emergencies	Techniques of emergency medical care in accordance with national and state curriculum. Study of soft tissue and environmental injuries	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AB with a grade of C or better.	LEC 0.5 0.5 0.5
SEM104AD	Secondary Basic Emergency Medical Technology: Head, Brain, Neck, and Spine	Techniques of emergency medical care in accordance with national and state curriculum. Study of injuries to the head, brain, neck, and spine.	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AC with a grade of C or better.	L+L 0.5 0.75 0.75
SEM104AE	Secondary Basic Emergency Medical Technology: Shock	Techniques of emergency medical care in accordance with national and state curriculum. Study of shock, hypotension, and hypoperfusion	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AD with a grade of C or better.	LEC 0.5 0.5 0.5
SEM104AF	Secondary Basic Emergency Medical Technology: Head ,Chest, and Abdomen	Techniques of emergency medical care in accordance with national and state curriculum. Study of injuries to head, chest, abdomen, genitalia, and acute abdominal disorders	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AE with a grade of C or better.	LEC 0.5 0.5 0.5
SEM104AG	Secondary Basic Emergency Medical Technology: Medical-Legal	Techniques of emergency medical care in accordance with national and state curriculum. Includes the role and scope of the duties and practice of the Basic Emergency Medical Technician. Includes standard of care, consents, and associated statutes, rules, and regulations	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AF with a grade of C or better.	LEC 0.5 0.5 0.5

SEM104AH	Secondary Basic Emergency Medical Technology: Pediatrics	Techniques of emergency medical care in accordance with national and state curriculum. Study of the human body from birth to 12 years of age. Includes pediatric patient assessment, treatment of medically or traumatically compromised patients, special hazards and abusive situations, and Sudden Infant Death Syndrome (SIDS)	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AG with a grade of C or better.	L+L 0.5 1.0 1.0
SEM104AI	Secondary Basic Emergency Medical Technology: Respiratory, Behavioral, Environmental	Techniques of emergency medical care in accordance with national and state curriculum. Study of acute and chronic respiratory emergencies, behavioral and environmental emergencies, and diabetic states	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AH with a grade of C or better.	L+L 0.5 1.0 1.0
SEM104AJ	Secondary Basic Emergency Medical Technology: Gynecologic or Obstetrical Emergencies	Techniques of emergency medical care in accordance with national and state curriculum. Study of gynecologic and obstetrical emergencies	Prerequisites: Currently enrolled in the Phoenix Union High School District and SEM104AI with a grade of C or better.	L+L 0.5 1.0 1.0
SEM104AK	Secondary Basic Emergency Medical Technology: Musculoskeletal Extremity Injuries	Techniques of emergency medical care in accordance with national and state curriculum. Study of techniques for stabilization and splinting of musculoskeletal injuries in extremities, including participation in two eight-hour clinical rotations through a local emergency department or an ambulance agency scheduled during the semester outside normal class hours	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AJ with a grade of C or better.	L+L 0.5 1.0 1.0
SEM104AL	Secondary Basic Emergency Medical Technology: Patient Movement and Ambulance Equipment	Techniques of emergency medical care in accordance with national and state curriculum. Study of techniques for lifting, moving, or positioning a patient, and use of ambulance/rescue vehicle equipment	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AK with a grade of C or better.	L+L 0.5 1.0 1.0

SEM104AM	Secondary Basic Emergency Medical Technology: Triage Management	Techniques of emergency medical care in accordance with national and state curriculum. Study of techniques for triage and disaster management in simulated situations	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AL with a grade of C or better.	L+L 0.5 0.75 0.75
SEM104AN	Secondary Basic Emergency Medical Technology: Intravenous Fluids	Techniques of emergency medical care in accordance with national and state curriculum. Study of techniques for assessing a patient with intravenous (IV) fluids	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AM with a grade of C or better.	L+L 0.25 0.5 0.5
SEM104AO	Secondary Basic Emergency Medical Technology: Evaluations	Techniques of emergency medical care in accordance with national and state curriculum. Includes final written and practical evaluations according to the National Registry of EMTs (NREMT) and Arizona Rules and Regulations	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AN with a grade of C or better.	L+L 0.5 1.0 1.0
SEM106	Secondary Vehicular Extrication and Patient Stabilization	Participative course designed to enhance the knowledge base of the Emergency Medical Technician (EMT) and to incorporate new knowledge and skills necessary to access, extricate, and care for victims of crash incidents. Provides exposure to scene management skills, including size-up, disentanglement, victim stabilization for single- and multi-victim situations, hazardous materials incidents, integration of local emergency medical services (EMS) for patient assessment and management, and standard operating procedures for selected victim scenarios.	Prerequisites: Current enrollment in the Phoenix Union High School District and (a grade of C or better in SEM104AO or permission of instructor).	L+L 1.0 2.5 2.5
SEM108	Secondary Trauma Patient Management	Provides exposure to victim assessment, initial treatment, resuscitative techniques, victim stabilization, victim transportation to an emergency care facility, and documentation	Prerequisites: Current enrollment in the Phoenix Union High School District and SEM104AO with a grade of C or better.	L+L 0.5 2.0 2.0

SFS101AA	Secondary Introduction to Fire Service Selection: Application Process	Overview of the application and selection processes used by various fire departments and fire service organizations. Identification of the job qualifications and requirements used by various fire departments and fire service organizations	Current enrollment in the Phoenix Union High School District.	LEC 0.5 0.5 0.5
SFS101AB	Secondary Introduction to Fire Service Selection: Selection Process and Resumes	Major components of written application processes, requirements, preparation of resumes, and their effect on employment prospects	Prerequisites: Current enrollment in the Phoenix Union High School District and SFS101AA with a grade of C or better.	LEC 1.0 1.0 1.0
SFS101AC	Secondary Introduction to Fire Service Selection: Interview Process	Preparation for the interview to include communications skills, mental preparation techniques, behaviors, and the importance of the interview in the pre-employment process. Role of the applicant and interviewer in the interview process	Prerequisites: Current enrollment in the Phoenix Union High School District and SFS101AB with a grade of C or better.	LEC 1.0 1.0 1.0
SFS101AD	Secondary Introduction to Fire Service Selection: Fire Station Culture/Observation	Elements of fire service culture and their effects on personal growth and interpersonal relationships. Preparation for on-site experiences at a fire station	Prerequisites: Current enrollment in the Phoenix Union High School District and SFS101AC with a grade of C or better.	L+L 0.5 1.0 1.0
SFS101AE	Secondary Introduction to Fire Service Selection: Lifelong Learning	General components of the selection process, the importance of general education, and components of lifelong learning in career choices	Prerequisites: Current enrollment in the Phoenix Union High School District and SFS101AD with a grade of C or better.	LEC 0.5 0.5 0.5
SFS102AA	Secondary Fire Department Operations: Organization and Dispatch	Introductory fire science course designed primarily for the potential fire department recruit. Includes fire department organization and dispatch	Currently enrolled in the Phoenix Union High School District.	LEC 0.25 0.25 0.25
SFS102AB	Secondary Fire Department Operations: Fire Behavior and Classes	Introductory fire science course designed primarily for the potential fire department recruit. Includes fire behavior, phases of fire, classes of fire, and fire control methods	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AA with a grade of C or better.	LEC 0.5 0.5 0.5
SFS102AC	Secondary Fire Department Operations: Fireground and Station Safety	Introductory fire science course designed primarily for the potential fire department recruit. Includes firefighter safety on the fireground and in the fire station	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AB with a grade of C or better.	L+L 0.25 0.5 0.5

SFS102AD	Secondary Fire Department Operations: Self-Contained Breathing Apparatus	Introductory fire science course designed primarily for the potential fire department recruit. Includes self-contained breathing apparatus (SCBA)	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AC with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AE	Secondary Fire Department Operations: Ropes, Knots, and Hitches	Introductory fire science course designed primarily for the potential fire department recruit. Includes ropes, knots, and hitches.	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AD with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AF	Secondary Fire Department Operations: Water Supply and Foam	Introductory fire science course designed primarily for the potential fire department recruit. Includes water supply and use of foam	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AE with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AG	Secondary Fire Department Operations: Fire Apparatus	Introductory fire science course designed primarily for the potential fire department recruit. Includes fire apparatus	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AF with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AH	Secondary Fire Department Operations: Hoses	Introductory fire science course designed primarily for the potential fire department recruit. Includes standard hose rolls, carries, and evolutions	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AG with a grade of C or better.	L+L 0.5 2.0 2.0
SFS102AI	Secondary Fire Department Operations: Hand Ladders	Introductory fire science course designed primarily for the potential fire department recruit. Includes standard hand ladder evolutions	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AH with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AJ	Secondary Fire Department Operations: Power Tools	Introductory fire science course designed primarily for the potential fire department recruit. Includes power tools.	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AI with a grade of C or better.	L+L 0.5 0.75 0.75
SFS102AK	Secondary Fire Department Operations: Building Construction	Introductory fire science course designed primarily for the potential fire department recruit. Includes building construction.	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AJ with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AL	Secondary Fire Department Operations: Forcible Entry	Introductory fire science course designed primarily for the potential fire department recruit. Includes forcible entry	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AK with a grade of C or better.	L+L 0.5 1.0 1.0

SFS102AM	Secondary Fire Department Operations: Search and Rescue	Introductory fire science course designed primarily for the potential fire department recruit. Includes search and rescue techniques	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AL with a grade of C or better.	L+L 0.5 1.0 1.0
SFS102AN	Secondary Fire Department Operations: Ventilation	Introductory fire science course designed primarily for the potential fire department recruit. Includes structure ventilation	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AM with a grade of C or better.	L+L 0.5 1.0 1.0
SFS102AO	Secondary Fire Department Operations: Salvage and Overhaul	Introductory fire science course designed primarily for the potential fire department recruit. Includes salvage and overhaul.	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AN with a grade of C or better.	L+L 0.25 1.0 1.0
SFS102AP	Secondary Fire Department Operations: Electrical Hazards	Introductory fire science course designed primarily for the potential fire department recruit. Includes electrical hazards.	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AO with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AQ	Secondary Fire Department Operations: Radiological Hazards	Introductory fire science course designed primarily for the potential fire department recruit. Includes radiological hazards	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AP with a grade of C or better.	L+L 0.25 0.5 0.5
SFS102AR	Secondary Fire Department Operations: Special Emergencies	Introductory fire science course designed primarily for the potential fire department recruit. Includes special emergencies	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AQ with a grade of C or better.	L+L 0.5 1.0 1.0
SFS102AS	Secondary Fire Department Operations: Physical and Mental Fitness	Introductory fire science course designed primarily for the potential fire department recruit. Includes physical and mental fitness	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AR with a grade of C or better.	LEC 0.5 0.5 0.5
SFS102AT	Secondary Fire Department Operations: Prevention and Investigation	Introductory fire science course designed primarily for the potential fire department recruit. Includes prevention and investigation.	Prerequisites: Currently enrolled in the Phoenix Union High School District and a grade of C or better in SFS102AS.	LEC 0.5 0.5 0.5
SFS102AU	Secondary Fire Department Operations: Code Violation	Introductory fire science course designed primarily for the potential fire department recruit. Includes code violation	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AT with a grade of C or better.	LEC 0.25 0.25 0.25

SFS102AV	Secondary Fire Department Operations: Incident Organization and Communication	Introductory fire science course designed primarily for the potential fire department recruit. Includes incident organization and communication	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AU with a grade of C or better.	LEC 0.5 0.5 0.5
SFS102AW	Secondary Fire Department Operations: Tactical Priorities	Introductory fire science course designed primarily for the potential fire department recruit. Includes tactical priorities	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AV with a grade of C or better.	LEC 1.0 1.0 1.0
SFS102AX	Secondary Fire Department Operations: Structural Fires	Introductory fire science course designed primarily for the potential fire department recruit. Includes operations applied to structural fires	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AW with a grade of C or better.	L+L 0.5 1.0 1.0
SFS102AY	Secondary Fire Department Operations: Evaluations	Introductory fire science course designed primarily for the potential fire department recruit. Includes final written evaluation and International Fire Service Accreditation Congress Practical Skills Validation.	Prerequisites: Currently enrolled in the Phoenix Union High School District and SFS102AX with a grade of C or better.	L+L 0.25 1.0 1.0
SFS134AA	Secondary Fitness and Conditioning for Firefighters: Physical Requirements	Overview of firefighters' physical fitness, nutrition, and protective clothing	Current enrollment in the Phoenix Union High School District.	LEC 0.5 0.5 0.5
SGT100	Fundamentals of Surgical Services	Preparation for the Certified Registered Central Service Technician (CRCST) role. Central Service work flow, job responsibilities, growth and development in the field, anatomy and physiology, microbiology for central service regulations and standards, infection prevention and control, tools for cleaning, decontamination, cleaning and decontamination, disinfection, sterile packaging and storage, processing, sterilization, management of patient care equipment, tracking systems, quality assurance, safety, communication, sterile processing for ambulatory surgery and clinics.	Prerequisites: None. Corequisites: HCS/SGT102 or permission of Program Director.	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0



SGT101	Medical Terminology for Surgical Services	Medical Terminology for patient care in surgery related areas. Use of word parts, term spelling, pronunciation and abbreviations related to all surgical specialties.	Prerequisites: None. Corequisites: HCS/SGT100.	LEC 1.0 1.0 1.0
SGT102	Basic Surgical Instrumentation for Surgical Services	History, construction and assembly of surgical instrumentation, categories, instrument set assembly, soft tissue foundation sets, general surgery instrumentation sets.	Prerequisites: None. Corequisites: HCS/SGT100.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0
SGT105	Surgical Technology Pre-Clinical	Direct observation of principles and culture of operating room. Traffic patterns, aseptic techniques, roles, professional surgical team work, instrument handling, safety precautions with regard to exposure, surgical attire, surgical regimen and chain of command.	Prerequisites: A grade of C or better in (BIO162 or BIO205) and PHY101.	LEC 1.0 0.5 0.5 LAB 0.0 1.5 1.5
SGT135	Instrument Handling I	Classification of surgical instruments for general surgery including basic laparoscopy, appendectomy, breast procedures, cholecystectomy, colon resection, gastrectomy, hemorrhoidectomy, herniorraphy, laparoscopic Nissen Fundoplication, liver resection, splenectomy, thyroidectomy, Whipple Procedure. Common and proper names for instruments in general surgery. Specific uses, handling, and care for surgical instruments in general surgery.	Prerequisites: None. Corequisites: HCS/SGT102 or permission of Program Director.	L+L 1.0 2.0 2.0
SGT152	Advanced Surgical Instruments for Surgical Services	Surgical specialty instrumentation care and assembly of instruments to include plastic, gynecologic, urologic, basic bone and joint, head and neck, neurosurgery, cardiovascular and thoracic, microscopic, endoscopes, stapling guns, and robotics procedures.	Prerequisites: A grade of C or better in HCS/SGT102.	LEC 2.0 1.0 1.0 LAB 0.0 3.0 3.0

SGT155	Instrument Handling II	Classification of specialized surgical instruments for surgical specialties including obstetric and gynecological procedures, genitourinary, otorhinolaryngology, orthopedic, oral and maxillofacial, plastic and reconstructive, ophthalmic, cardiothoracic, peripheral vascular, and neurosurgery. Common and proper names for instruments in the surgical specialties. Specific uses, handling, and care for surgical instruments in the surgical specialties.	Prerequisites: A grade of C or better in SGT135.	L+L 1.0 2.0 2.0
SGT156	Hospital Central Service Practicum for Surgical Technology	Short-term supervised student observation and application for 40 hours of central service theory and laboratory skills. Exposure to limited compilation of case carts, building of instrument trays, distribution of supplies, sterilization and inventory.	Prerequisites: A grade of C or better in HCS/SGT102 or permission of Program Director. Corequisites: HCS/SGT152 or permission of Instructor.	LAB 0.5 1.5 0.0
SGT165	Surgical Procedures I	General Surgery arena procedures. Pre-operative procedures to include patient's charts and consent forms. Common diagnostic procedures prior to surgery. Operating room admission procedures and interview, charting, and checklist. Purpose of the post anesthesia care unit (PACU). Impact of specific chronic illnesses on body functions. Issues pertaining to death and dying. Special considerations for the pediatric and geriatric patient.	Prerequisites: A grade of C or better in SGT135.	LEC 4.0 2.0 2.0 LAB 0.0 6.0 6.0
SGT180	Pharmacology for Surgical Technology I	Role of surgical technologist in safe handling of drugs according to operating room policies and procedures. Uses and classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during topical, local anesthesia, antibiotic, diagnostic agent and hemostatic agent administration.	Prerequisites: A grade of C or better in SGT135.	L+L 1.0 3.0 3.0

SGT200	Operating Room Practicum I	Roles and responsibilities of operating room personnel focusing on the surgical technician under the direction of the clinical facility preceptor demonstrating the role of the surgical technologist and scope of practice and standard of recommendations.	Prerequisites: A grade of C or better in SGT165.	LAB 1.0 6.0 0.0
SGT205	Operating Room Practicum II	Reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties.	Prerequisites: A grade of C or better in SGT200.	LAB 2.0 12.0 0.0
SGT208	Perioperative Case Management	Pre-operative procedures to include patient's charts and consent forms. Common diagnostic procedures prior to surgery. Operating room admission procedures and interview, charting, and checklist. Purpose of the post anesthesia care unit (PACU). Impact of specific chronic illnesses on body functions. Issues pertaining to death and dying. Special considerations for the pediatric and geriatric patient. Includes a clinical observation experience.	Prerequisites: A grade of C or better in SGT105.	LEC 1.0 0.5 0.5 LAB 0.0 1.5 1.5
SGT210	Surgical Procedures II	General surgical procedures to include ophthalmic, plastic surgery, reconstruction with grafting, obstetric, gynecological, genitourinary, otorhinolaryngology, oral and maxilla facial surgery with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative areas of surgical technology. Surgical care provided by the surgical technologist in the perioperative arena.	Prerequisites: A grade of C or better in SGT165.	LEC 4.0 2.0 2.0 LAB 0.0 6.0 6.0

SGT215	Pharmacology for Surgical Technology II	Role of surgical technologist in safe handling of drugs according to operating room policies and procedures. Uses and classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during regional and general anesthesia administration, and surgical specialties of obstetrics, peripheral vascular, orthopedics and oncology.	Prerequisites: A grade of C or better in SGT180.	L+L 1.0 3.0 3.0
SGT220	Operating Room Practicum III	Intermediate level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties.	Prerequisites: A grade of C or better in SGT205.	LAB 3.0 15.0 0.0
SGT225	Operating Room Practicum IV	Advanced level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties.	Prerequisites: A grade of C or better in SGT220.	LAB 3.0 15.0 0.0
SGT227	Operating Room Practicum V	Continued advanced level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties.	Prerequisites: A grade of C or better in SGT225.	LAB 3.0 15.0 0.0
SGT230	Surgical Technology Materials Update	Current surgical technology materials. Surgical specialty modifications, introductions, technology. Specific uses, handling, application to surgical procedures.	Prerequisites: Currently enrolled in Surgical Technology or Surgical Technology for the Operating Room Nurse program, or Certified Surgical Technologist, or permission of Program Director.	LEC 2.0 2.0 2.0 LAB 1.0 3.0 3.0

SGT260	Surgical Procedures III	Specialized surgical procedures of orthopedic, peripheral vascular, cardiovascular, thoracic and neurosurgery to include applications with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative surgical arenas. Care provided by the surgical technologist in each phase of surgery.	Prerequisites: A grade of C or better in SGT210.	LEC 2.0 1.0 1.0 0.0 3.0 3.0
SGT275	Certification Examinations Preparation	Preparation for the National Surgical Technology Certification Examination. Review of the content specifications, techniques for preparation and review of current literature determined by the Liaison Council on Certification for Surgical Technologists. Exploration of career possibilities.	Prerequisites: A grade of C or better in SGT210 and SGT215 or permission of the Program Director.	L+L 2.0 3.0 3.0
SGT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

SGT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SGT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
SLC201	Introduction to Linguistics	Introduction to the study of language. Study of the nature and diversity of world languages, linguistic structures and functions of language, language variation, pragmatics and the learning/acquisition of first and second languages.	Prerequisites: None.	LEC 3.0 3.0 3.0
SLC202	Introduction to Literary and Cultural Theory	Introduction to the study of literary and cultural theory. Interdisciplinary approaches to analyzing literary texts for context, meaning and form. Assessment of various literary genres which may include fiction, film, visual arts and performance.	Prerequisites: A grade of C or better in ENG101 or ENG107. Corequisites: ENG102 or ENG108.	LEC 3.0 3.0 3.0

SLM110	Introduction to Senior Living Management	Comprehensive overview of the senior living industry. Includes different types of senior living housing, models of service delivery, and the roles and responsibilities of senior living managers. Also covers changing demographics, the future of senior living, and emerging models of care.	Prerequisites: None.	LEC 3.0 3.0 3.0
SLM112	Adult Development and Aging for Senior Living Facilities	Overview of topics related to aspects of adult development and aging for senior living facilities. Includes diversity and cultural competency, resident rights and advocacy, and etiology of Alzheimer's and other related disorders and mental health illnesses.	Prerequisites: None.	LEC 3.0 3.0 3.0
SLM113	Resident Care and Management in Senior Living Facilities	Overview of delivery of quality services to residents of senior living and long-term care facilities. Covers methods for assessing residents and developing individual service plans including nutrition and health planning. Also includes the role of families and advanced care planning.	Prerequisites: None.	LEC 3.0 3.0 3.0
SLM114	Organizational Management in Senior Living	Overview of roles and responsibilities of senior living administrators and managers. Review of models of hospitality and organizational effectiveness, structures, and behaviors.	Prerequisites: None.	LEC 3.0 3.0 3.0
SLM116	Human Resource Management in Senior Living Facilities	Examination of the principles of human resource management as it relates to senior living facilities. Includes employment issues related to recruiting, selecting, training, and evaluating personnel. Issues related to staffing, scheduling, and developing staff also covered.	Prerequisites: None.	LEC 2.0 2.0 2.0

SLM117	Financial Management and Marketing Practices in Senior Living Facilities	Overview of principles of financial management. Includes budgeting, financial planning, reimbursement procedures, third party payment systems, and governmental and legal regulations. Also covers basic principles of marketing and applications for senior living facilities.	Prerequisites: None.	LEC 2.0 2.0 2.0
SLP104	Speech, Language, and Hearing Development	Focuses on the processes involved in the normal development of human communication. Emphasis on normative processes involved in speech, language, and hearing development. Examines normal processes of bilingual speech and language development	Prerequisites: None.	LEC 3.0 3.0 3.0
SLP205	Introduction to Communication Disorders	Provides an overview of normative aspects of human Communication including language, hearing, and speech. Focuses on causes, characteristics and implications of developmental and acquired communication disorders across the lifespan	Prerequisites: None.	LEC 3.0 3.0 3.0
SLP210	Speech and Hearing Anatomy and Physiology	Studies the anatomical systems that underlie human speech including the respiratory system and related nervous system processes. Examines the physical characteristics of sound and the structure and function of the human auditory system	Prerequisites: None.	LEC 3.0 3.0 3.0
SLP212	Language Disorders and Rehabilitation	Explores nature, causes and treatment of language disorders Across the lifespan, including treatments specific to bilingual populations.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	LEC 3.0 3.0 3.0



SLP214	Speech Sound Disorders and Phonetics	Provides an overview of English phonetics. Focuses on speech sound production from a linguistic, physiologic, acoustic and clinical perspective. Transcription of normal and disordered speech at the entry-level using the International Phonetic Alphabet (IPA). Reviews characteristics and treatment procedures for a variety of speech sound disorders.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	LEC 3.0 3.0 3.0
SLP215	Speech, Language, Hearing Disorders and Rehabilitation	Focuses on speech sound production from a linguistic, physiologic, acoustic and clinical perspective. Reviews characteristics and treatment procedures for a variety of speech, language, hearing disorders.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	LEC 3.0 3.0 3.0
SLP216	Aural Rehabilitation	Reviews anatomy and physiology of hearing production and Hearing disorders. Focuses on treatment principles, amplification systems, modes of communication, screening procedures and instruction in various settings. Introduces augmentative/alternative communication systems and their appropriate use. Explores the professions providing treatment for persons with hearing disorders	Prerequisites: A grade of C or better in SLP210.	LEC 3.0 3.0 3.0
SLP217	Clinical Ethics and Documentation	Focuses on issues associated with clients'/patients' rights, professional and ethical behaviors, as specified by American Speech-Language and Hearing Association (ASHA) and other resources. Includes an overview of the educational service system and the health care industry. Reviews documentation required in planning, implementing and documenting communicative behaviors.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	LEC 3.0 3.0 3.0

SLP218	Behavior Management	Studies a variety of behavior management techniques including classical conditioning, operant conditioning modeling, motor learning and cognitive learning. Examines how to apply these techniques in working with speech-language disordered clients.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	LEC 3.0 3.0 3.0
SLP220	Clinical Ethics	Focuses on issues associated with clients'/patients' rights, professional and ethical behaviors, normalization, compensation and guidelines as specified by American Speech-Language and Hearing Association (ASHA) and other resources. Includes an overview of the educational service system and the health care industry. Topics include personnel, major components, and laws that govern each type of system.	Prerequisites: A grade of C or better in (SLP223 and SLP224) or Corequisites: (SLP223 and SLP224) or permission of Instructor.	LEC 2.0 2.0 2.0
SLP230	Modifying Communicative Behaviors	Introduction to the therapeutic process. Focuses on principles of behavior management used to facilitate the learning of speech and language skills. Reviews documentation required in planning, implementing and evaluating communicative behaviors. Identifies ethical behaviors necessary to protect client rights in different therapeutic settings.	Prerequisites: A grade of C or better in SLP212 or SLP214 or Corequisites: SLP212 or SLP214.	LEC 2.0 2.0 2.0
SLP235AA	Speech-Language Pathology Practicum	Practical experience in conducting speech-language therapy. Provides opportunities to create lesson plans, implement therapy, record client performance and maintain appropriate documentation for a variety of speech-language disorders in a variety of therapeutic environments. A minimum of 50 hours in a therapeutic environment required.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	L+L 1.0 1.0 1.0

SLP235AB	Speech-Language Pathology Practicum	Practical experience in conducting speech-language therapy. Provides opportunities to create lesson plans, implement therapy, record client performance and maintain appropriate documentation for a variety of speech-language disorders in a variety of therapeutic environments. A minimum of 100 hours in a therapeutic environment required.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	L+L 2.0 2.0 2.0
SLP240	Assistive Technology and Augmentative Communication	Provides and overview about the type of client who may need AT/AAC as well as the professional team involved in that decision. Reviews use of computer hardware and software that has been adapted for disabled individuals as well as low-tech and high-tech assistive technology and augmentative/alternative communication systems.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	LEC 3.0 3.0 3.0
SLP242	Low Incidence Disabilities	Provides overview of disabilities with a focus on treatment techniques for low incidence disabilities, including blindness, low vision, deafness, hard-of-hearing, moderate to severe mental impairment, deaf-blindness, significant developmental delay, complex health issues, serious physical impairment, multiple disability, traumatic brain injury, genetic syndromes, and autism.	Prerequisites: Admission into the Speech Language Pathology Assistant (SLPA) Program.	LEC 3.0 3.0 3.0

SLP296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
SLP296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
SLP296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

SLP296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
SLP298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
SLP298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

SLP298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
SML111	Sheet Metal I	History and background of the sheet metal apprentice. Basics of drafting, layout and pattern development used in the sheet metal trade	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML112	Sheet Metal II	Layout and pattern development. Importance of time management. Use of power equipment and common sheet metal materials, trade mathematics and air flow movement	Prerequisites: A grade of C or better in SML111.	LEC 5.0 5.0 5.0
SML113	Sheet Metal III	Safe use of hand tools. Seams, locks and types of materials common to the sheet metal industry. Basic mathematics and introduction to service work. Field installation included	Prerequisites: A grade of C or better in SML112.	LEC 5.0 5.0 5.0
SML114	Sheet Metal IV	Field installations emphasizing duct and gutter hanging, inserts, equipment and housings. Includes roofs and roof pitch, blueprint reading and sheet metal drafting. Residential heating and air conditioning using ducting and blowpipe. Codes and materials for food service equipment	Prerequisites: A grade of C or better in SML113.	LEC 5.0 5.0 5.0

SML115	Basic Refrigeration	Environmental service industry. Refrigeration tools instruments and gauges. Tubing and pipe. Tubing fabrication procedures utilizing torches, soldering and brazing. Refrigeration principles including pressure and pressure measurements, temperature and characteristics of heat. Refrigeration system components, terminology and operation. Compressors, metering devices and refrigerant. Preparing and charging systems	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML116	Refrigeration Systems I	Servicing small hermetic refrigeration units. Leak testing, charging and adding oil to a hermetic system. Diagnosing internal faults in a hermetic system. Checking refrigerant levels and charging a commercial refrigeration system. Removing refrigerant and adding oil to a commercial system. Determining system balance for a commercial refrigeration system. Environmental Protection Agency (EPA) requirements for the recovery, recycling and reuse of chlorofluorocarbon refrigerants (CFCs). Equipment used in recovery, recycling and reclaiming procedures.	Prerequisites: (Registered apprentice status and a grade of C or better in SML115) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML117	Refrigeration Systems II	Basic concepts of electricity, alternating current and electrical schematics and diagrams. Control circuits, layouts and troubleshooting. Ohms law and circuit operating characteristics. Capacitors and capacitor testing, power factors, single phase and three phase transformers.	Prerequisites: (Registered apprentice status and a grade of C or better in SML115 and SML116) or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0

SML118	Refrigeration Systems III	Single phase induction motors, three phase induction motors and special motors. Electric motor protection. Servicing electric motors, hermetic compressor motor protection and servicing hermetic motors. Includes introduction to electronic devices, testing electronic devices, circuits and electronic device applications.	Prerequisites: (Registered apprentice status and a grade of C or better in SML117) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML119	Refrigeration Systems IV	Specific heating ventilation, air conditioning (HVAC) principles. Properties of air and air flow through ducts. Methods to balance air and water flow. Heating, ventilation air conditioning parts and equipment. Layout, operation, start up procedures, and service of specific systems and devices. Alternative heating methods	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML120	Refrigeration Systems V	Heating and cooling systems start-up, operation and service. Water cooled and heated systems. Central air conditioning. Head pumps. Condensers and compressors	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML121	Refrigeration Systems VI	Specific commercial system applications. Basic concepts of heat recovery. Installation and capacities of commercial evaporators. Features of commercial defrost systems. Installation and application of commercial system components. Procedures for checking and testing commercial systems. Servicing commercial systems and components. Leak testing and evacuation. Servicing refrigerant components. Factors related to heat loads. Constant volume/variable temperature. Operation of multizone units. Safety practices	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0



SML122	Refrigeration Systems VII	Control system fundamental concepts. Pneumatic control systems. Pneumatic thermostats and auxiliary devices. Pneumatic damper and valve control. Calibration, troubleshooting and maintenance procedures. Electric and electronic control systems. Computerized building management. Zone control systems, operation and service. Variable air volume system and terminal control. Direct Digital Control (DDC) systems and devices. Timers, thermostats and load controllers. Energy management and safety	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML124	HVAC IV: Equipment, Devices, Compressors and Pumps	Heat transfer and human comfort. Humidifiers and humidity. Air filters and air filter friction loss. Metering devices and expansion valves. Thermal expansion valves. Compressors and heat pumps. Installation, adjustment, replacement, service, troubleshooting. Reverse-cycling. Leak detection, evacuation, recovery, and charging heating, ventilating, and air conditioning (HVAC) systems. Service equipment of HVAC systems.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML130	Insulation, Air, Layout and Fabrication	Purpose and installation of air distribution accessories. Thermal and acoustic insulation, fibrous glass duct liner and fiberglass blanket and fiberglass pipe and flexible foam insulation. Sheet metal layout and processes, terminology, tools, and safety. Parallel and radial line development and triangulation. Layout and fabrication of ductrun fittings.	Registered apprentice status or permission of Apprenticeship Coordinator.	LEC 5.0 5.0 5.0

SML201	HVAC V: Maintenance and Troubleshooting	Tools, instruments, equipment, components, procedures, materials, and tasks for preventative maintenance and troubleshooting of heating, ventilating and air conditioning (HVAC) systems. Microprocessor, gas, electric, and oil heating systems. Furnaces, electric heater packages for cooling, and heat pumps.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML203	HVAC VI: Troubleshooting Heating and Cooling Systems	Cooling and heating systems; heat pumps, Heating, Ventilation and Air Conditioning (HVAC) systems and accessories. Commercial heating and cooling systems. Air and water balancing systems. Steam systems. Customer relations.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML206	HVAC VII: Air Quality and Energy Conservation	Advanced blueprint reading. Architectural, plumbing, mechanical, and electrical drawings. Submittal, transfer and design. Indoor air quality. Heating, Ventilating and Air Conditioning (HVAC) equipment, components, accessories and systems. Introduction to computers and computer networks. Energy conservation and management.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML211	Sheet Metal V	Intermediate drafting skills for advanced layout and pattern development. Operation and safety methods for hand operated shop machines. Use of special materials and introduction to the use of formulas. Time management techniques	Prerequisites: A grade of C or better in SML114.	LEC 5.0 5.0 5.0
SML212	Sheet Metal VI	Advanced layout, pattern development and use of special sheet metal power equipment. Includes trigonometric functions as applicable to the sheet metal trade Basic principles of refrigeration and air conditioning and field installation procedures	Prerequisites: A grade of C or better in SML211.	LEC 5.0 5.0 5.0

SML213	Sheet Metal VII	Moving heavy equipment and planning a duct job in the field. Requirements, types, seams and locks for furnace ducts, architectural sheet metal, and residential heating and air conditioning ducts. Also, blueprint reading, fire prevention and blowpipe systems	Prerequisites: A grade of C or better in SML212.	LEC 5.0 5.0 5.0
SML214	Sheet Metal VIII	Advanced blueprint and detailing for the sheet metal trade. Materials estimating. Solar heating principles and installation procedures. Includes, installation of food service equipment, sign building, use of ductboard, and testing and balancing air conditioning systems	Prerequisites: A grade of C or better in SML213.	LEC 5.0 5.0 5.0
SML215	Ducts, Drainage and Ventilation	Process of soldering common and special materials. Methods for supporting ducts including taping of hangers and fasteners. Calculations for roof drainage systems. Principles of ventilation. Safety procedures stressed.	Prerequisites: (Registered apprentice status and a grade of C or better in SML213 and SML214) or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML216	Duct Systems and Methods of Welding	Principles of air-flow within duct systems. Includes duct system components, types of duct materials and methods of duct construction. Introduction to welding plastics and metals. Safety stressed.	Prerequisites: (Registered apprentice status and a grade of C or better in SML213 and SML214) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML217	Blueprint Reading and Principles of Air Conditioning	Components of blueprint plans to coordinate sheet metal work with other trades. Reading and interpreting of specifications, mechanical plans, electrical plans, industrial plans and specialty plans. Basic principles of air-conditioning. Emphasizes air distribution, outlets, applied load estimating, commercial and residential load estimating, residential and commercial controls, and the metric system.	Prerequisites: (Registered apprentice status and a grade of C or better in SML213 and SML214) or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0

SML220	Environmental Systems I	General care and use of instruments. Fluid and air flow in heating, ventilating, and air conditioning (HVAC) systems. Principles of heat flow, heat transfer and the refrigeration cycle. Fundamentals of electricity. Automatic control systems. Test measurements using volt-ammeters, tachometers and thermometers. Air pressure and air flow measurements. Basic operating principles of HVAC systems and duct systems. Fans, cautions, construction and fan laws. Testing, adjusting and balancing (TAB) forms	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 5.0 5.0 5.0
SML224	HVAC VIII: Water Treatment and HVAC Design	Water problems, remedies, maintenance, and treatment. Commercial water and steam systems. Inspection and evaluation. System start up and shutdown. Cooling towers; evaporative condensers, boilers, chillers, air handlers and forced air systems. Components, accessories and design factors. Refrigerants and oils. Load calculations. Commercial and industrial refrigeration.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML226	Construction Sheet Metal and Mechanical Systems I	Field measuring and fitting. Air and duct systems and air source equipment. Welding practices, and arc-welding procedures. Brazing and flame cutting. Mechanical refrigeration fundamentals, mechanical systems, and heat pumps.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML228	Construction Sheet Metal and Mechanical Systems II	Principals of airflow. Comprehensive blueprint and specification reading. Fabrication and triangulation. Roofing materials, gutters, downspouts, and chimneys. Installation techniques of elbows, outlet tubes, gutters and gutter outlets, and roof, chimney, and wall flashing.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0

SML230	Construction Sheet Metal and Mechanical Systems III	Estimating labor, materials, equipment, and delivery. Staff organization and staff relations. Shop production. Coordination with other trades. Air balance principle and systems. Layout and fabrication methods.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML240	Construction Sheet Metal and Mechanical Systems IV	Layout and fabrication of louvers, dampers and access doors. Room and building ventilation. Moisture, humidity, temperature, energy and air flow. Fume and exhaust systems and components. Crew Leader skills.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 5.0 5.0 5.0
SML296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
SML296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

SML296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
SML296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
SML298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

SML298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SML298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
SMT234	Semiconductor Processing II	Overview of silicon technology, diffusion, oxidation, and cleaning processes, including ion implantation and chemical vapor deposition (CVD), metal deposition, and epitaxial technology.	Prerequisites: Currently employed at STMicroelectronics or permission of Instructor.	L+L 3.0 4.0 4.0
SMT244	Semiconductor Processing III	Overview of photolithography and etch technology in semiconductors. Process relationships of incoming materials, quality assurance, statistical process control, measurement systems analysis, defect density, reliability, and yield improvement in manufacturing semiconductors.	Prerequisites: A grade of C or better in (SMT234 and currently employed at STMicroelectronics) or permission of Instructor.	L+L 3.0 4.0 4.0

SOC101	Introduction to Sociology	The systematic study of social behavior and human groups, particularly the influence of culture, socialization, social structure, stratification, social institutions, differentiation by region, race, ethnicity, sex/gender, age, class, and socio/cultural change upon people's attitudes and behaviors.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC105	Introduction to American Indian Studies	Introduction to political, economic, and social structures of American Indian Nations. Provides overview of American Indian tribal cultures prior to contact, the impact of European contact, and the influence of western social systems on tribal nations.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC110	Drugs and Society	Provides a sociological understanding of drug use and policy. Examines social-cultural factors contributing to use and abuse and effects of commonly used drugs on the individual and society. Reviews current theories and research relating to drug use. Introduces extensive coverage of various methods and statistics for measuring drug use. Explores prevention, intervention, and treatment. Examines public policies concerning drug related issues.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC112	American Indian Policy	Reviews United States government policies and their impact on American Indian sovereignty. Examines historic, legal, economic, and social issues regarding Indian policies and how they impact Indian Nations and individual Indians. Studies historical as well as contemporary policies created by the Federal Government that define the trust relationship between the United States government and Indian Nations	Prerequisites: None.	LEC 3.0 3.0 3.0



SOC130	Human Sexuality	Examination of the physical, social, cultural, and institutional contributions to human sexuality. Examination of facts and myths, literature, and changing mores regarding human sexuality to acquire knowledge about cultural and social events and processes. Explores sexuality in contemporary society. This course contains mature adult content.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC141	Sovereign Indian Nations	Explores the sovereign status of American Indians as it relates to social relationships, traditions, and culture of American Indians. Reviews historic relations with non-Indian societies, the development of federal Indian law, tribal governments and their functions. Examines treaty rights, environmental issues, public policy, economic development, other current issues, and contemporary social problems	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC143	Sociology of African American Problems	Social, economic, political and domestic problems encountered by African Americans in typical urban environments. Emphasis on the specific dynamics of adjustment, survival and empowerment of urban African Americans	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC157	Sociology of Families and Relationships	Systemic analysis of socio-cultural and historical origins of modern families in the U.S. and their importance, major challenges and changing trends. Explores being single, dating and attraction, love, cohabitation and marriage, family planning and parenthood, conflict and crisis within the family, and divorce.	Prerequisites: None.	LEC 3.0 3.0 3.0

SOC160	American Indian Law	Analyzes the legal system of the United States Government as it applies to American Indian Nations. Examines how United States legal institutions have impacted Indian sovereignty. Units of analysis include the development of Indian law, United States Supreme Court decisions, Congressional Acts, treaty rights and the development of tribal governments. Focuses on legal institutions that have abridged the property rights of Indian Nations.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC180	Social Implications of Technology	Effects of development and implementation of technology on society. Historical and multi-cultural comparisons of this process, current concerns addressed, and prospects for the future analyzed.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC212	Gender and Society	A sociological analysis of the way culture shapes and defines the positions and roles of both men and women in society. Major emphasis on social conditions which may lead to a broadening of gender roles and a reduction of gender role stereotypes and the implications of these changes.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC220	Sport and Society	Applies the sociological perspective to the study of sport. Emphasizes how hierarchies of race, class, and gender in the United States impact the sport experience of fans, athletes, and athletic administrators, as well as how professional, collegiate, and amateur sports have at times played a transformative role in society.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC241	Race and Ethnic Relations	Examines how the social construction of race shapes social interaction and social institutions. Explores the consequences of power, privilege and oppression among major ethnic and racial groups in the United States.	Prerequisites: None.	LEC 3.0 3.0 3.0

SOC245	Social Deviance	A sociological analysis of social deviance including a review of theories, individual and social implications of deviant labeling, and relevant aspects of social control.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC251	Social Problems	A systematic and in-depth survey of selected social problems and inequalities from a sociological perspective, including what is known about the problem, recent trends, their causes and consequences, individual and societal responses to them, and possible remedies or policies that could address these issues. Issues to be examined may include issues in health care, dependencies, crime/violence, inequalities in race/class/gender/region/age, family, education, work, the economy, population migration/immigration, the environment, war and global insecurity.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC253	Social Class and Stratification	Focus on the class structure of American Society. Effects of social class position on individual life chances. The occurrence, causes and consequences of poverty in the United States.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC265	Sociology of Aging	Examination of the aging process from post adolescence through old age from interdisciplinary and multicultural perspectives. Emphasis on positive participation in major social institutions and the amelioration of age-related problems	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC266	Sociology Through Film	Examines movie-going and the experience of spectatorship. Studies how motion pictures reflect, influence, and are influenced by American culture and societal institutions. Explores the role of the movie industry as a vehicle for social commentary, analysis, and criticism.	Prerequisites: None.	LEC 3.0 3.0 3.0

SOC270	The Sociology of Health and Illness	Roles of health care providers and patients, various modalities of treatment and prevention, and the history, current status, and future trends in medicine and medical technology, and complementary health approaches from a cross-cultural and global sociological perspective.	Prerequisites: None.	LEC 3.0 3.0 3.0
SOC282AA	Service-Learning Experience in Sociology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: A grade of C or better in SOC101 and permission of Instructor.	LAB 1.0 1.0 0.0
SOC282AB	Service-Learning Experience in Sociology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: A grade of C or better in SOC101 and permission of Instructor.	LAB 2.0 2.0 0.0
SOC282AC	Service-Learning Experience in Sociology	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: A grade of C or better in SOC101 and permission of Instructor.	LAB 3.0 3.0 0.0
SOC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

SOC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
SOC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
SOC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

SOC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
SOC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SOC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
SPA055	Fundamentals of Spanish Grammar	Introduces basic concepts of Spanish pronunciation and grammar for successful study of the language. Emphasis on grammar, sentence structure, and practice of simple dialogues	Prerequisites: None.	LEC 1.0 1.0 1.0

SPA085AA	Speedy Spanish I	Basic vocabulary and grammar to develop conversational skills in Spanish. Emphasis on speaking skills	Prerequisites: None.	LEC 1.0 1.0 1.0
SPA085AB	Speedy Spanish II	Intermediate development of vocabulary and grammar to develop conversational skills in Spanish. Emphasis on speaking skills.	Prerequisites: A grade of C or better in SPA085AA. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
SPA085AC	Speedy Spanish III	Advanced development of vocabulary and grammar to develop conversational skills in Spanish. Emphasis on speaking skills.	Prerequisites: A grade of C or better in SPA085AB. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
SPA095	Speak Spanish I	Limited vocabulary and grammar to help develop fluency in Spanish. Emphasis on speaking skills	Prerequisites: None.	LEC 1.0 1.0 1.0
SPA096	Speak Spanish II	Limited vocabulary and grammar to help develop fluency in Spanish. Emphasis on speaking skills.	Prerequisites: A grade of C or better in SPA095. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
SPA097	Speak Spanish III	Limited vocabulary and grammar to help develop fluency in spoken Spanish. Emphasis on speaking skills; some written work required.	Prerequisites: A grade of C or better in SPA096. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
SPA101	Elementary Spanish I	Basic grammar, pronunciation and vocabulary of the Spanish language. Includes the study of the Spanish-speaking cultures. Practice of listening, speaking, reading, and writing skills	Prerequisites: None.	LEC 4.0 4.0 4.0
SPA101AA	Elementary Spanish I	Basic grammar, pronunciation and vocabulary of the Spanish language. Includes the study of the Spanish-speaking cultures. Practice of listening, speaking, reading, and writing skills	Prerequisites: None.	L+L 4.0 5.0 5.0
SPA102	Elementary Spanish II	Continued study of grammar and vocabulary of the Spanish language and study of the Spanish-speaking cultures. Emphasis on speaking, reading, and writing skills.	(A grade of C or better in SPA101 or SPA101AA), or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0

SPA102AA	Elementary Spanish II	Continued study of grammar and vocabulary of the Spanish language and study of the Spanish-speaking cultures. Emphasis on speaking, reading, and writing skills.	(A grade of C or better in SPA101 or SPA101AA), or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 4.0 5.0 5.0
SPA103	Elementary Spanish for Spanish Speakers I	Review of basic Spanish grammar and pronunciation. Emphasis on reading and writing skills in Spanish. For native speakers needing review of essential language skills	Spanish-speaking or permission of Department or Division.	LEC 4.0 4.0 4.0
SPA104	Elementary Spanish for Spanish Speakers II	Continued review of grammatical problems in speaking and writing and reading in Spanish.	Prerequisites: A grade of C or better in SPA103 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
SPA109	Law Enforcement Spanish I	Conversational and written Spanish for law enforcement personnel. Emphasis on basic sentence structure, pronunciation and vocabulary used in common job-related situations.	Prerequisites: None.	LEC 3.0 3.0 3.0
SPA111	Fundamentals of Spanish	Accelerated study of elementary Spanish for students with previous Spanish coursework. Includes basic Spanish grammar, pronunciation, vocabulary and the study of the Spanish-speaking cultures. Emphasis on speaking, listening, reading, and writing skills.	Prerequisites: A grade of C or better in SPA101 or SPA101AA or SPA115 or SPA115AA or two years of high school Spanish or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
SPA115	Beginning Spanish Conversation I	Basic pronunciation, vocabulary, sentence structures, and cultural awareness, necessary to develop speaking and listening skills in Spanish	Prerequisites: None.	LEC 3.0 3.0 3.0
SPA115AA	Beginning Spanish Conversation I	Conversational Spanish. Basic sentence structure, pronunciation and vocabulary necessary to develop speaking ability in Spanish. Designed for students seeking speaking and listening abilities with little emphasis on grammar	Prerequisites: None.	L+L 3.0 4.0 4.0



SPA116	Beginning Spanish Conversation II	Continued study of basic pronunciation, vocabulary, sentence structures, and a cultural awareness necessary to develop speaking and listening skills in Spanish.	Prerequisites: A grade of C or better in SPA115 or SPA115AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA116AA	Beginning Spanish Conversation II	Continued development of speaking and listening skills for effective communication in Spanish.	Prerequisites: A grade of C or better in SPA115 or SPA115AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	L+L 3.0 4.0 4.0
SPA117	Health Care Spanish I	Basic conversational Spanish for health care workers or students. Emphasis on basic sentence structure, pronunciation and vocabulary used in health care settings	Prerequisites: None.	LEC 3.0 3.0 3.0
SPA117AA	Health Care Spanish I: Introduction	Part one of basic medical terminology in Spanish for health care personnel or students. Emphasis on pronunciation and vocabulary needed in health care setting, including coverage of routine information gathered	Prerequisites: None.	LEC 1.0 1.0 1.0
SPA117AB	Health Care Spanish I: Intermediate	Part two of basic Spanish communication for health care personnel or students. Emphasis on pronunciation and vocabulary needed in health care settings, including medications and their use.	Prerequisites: A grade of C or better in SPA117AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 1.0 1.0 1.0
SPA118	Health Care Spanish II	Basic conversational Spanish for health care personnel or students. Emphasis on basic sentence structure, pronunciation, and vocabulary used in health care settings.	Prerequisites: A grade of C or better in SPA117 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA119	Spanish for Educational Settings I	Basic conversational Spanish for teachers, counselors, administrators and other school personnel. Emphasis on basic sentence structure, pronunciation and vocabulary used in educational settings	Prerequisites: None.	LEC 3.0 3.0 3.0

SPA120	Spanish for Educational Settings II	Basic conversational Spanish for teachers, counselors, administrators and other school personnel. Continuation of SPA119, expanding into secondary and post-secondary educational settings. Emphasis on basic sentence structure, pronunciation and vocabulary.	Prerequisites: A grade of C or better in SPA119 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA201	Intermediate Spanish I	Continued study of essential Spanish grammar and Spanish-speaking cultures. Continued practice and development of reading, writing, and speaking skills in Spanish. Emphasis on fluency and accuracy in spoken Spanish.	Prerequisites: A grade of C or better in SPA102, or SPA102AA, or SPA111, or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
SPA202	Intermediate Spanish II	Review of grammar, continued development of Spanish language skills with continued study of the Spanish-speaking cultures.	A grade of C or better in SPA201, or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
SPA203	Spanish for Spanish-Speaking Students I	Designed for Spanish-speaking students. Emphasis on written composition, grammar review, punctuation and spelling, literature and conversation. May be taken in lieu of SPA201	Permission of instructor or Department Chair.	LEC 4.0 4.0 4.0
SPA204	Spanish for Spanish-Speaking Students II	Designed for Spanish-speaking students. Advanced study of Spanish grammar, composition, literature, and conversation.	Prerequisites: A grade of C or better in SPA203 or SPA201 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
SPA205	Spanish for Medical Interpretation I	Introduction to Spanish interpretation for medical interpreters. Covers code of ethics, national standards and medical interpreter's responsibilities as well as cultural awareness and legal issues. Interpretation for first responders included.	Prerequisites: A grade of B or better in SPA202 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0

SPA206	Spanish for Medical Interpretation II	Continuation of Spanish interpretation for medical interpreters. Medical vocabulary and translation relating to human anatomy and physiology emphasized.	Prerequisites: A grade of B or better in SPA205 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA217	Spanish for Business Communication	Continued development of Spanish language skills with emphasis on topics related to conducting business in Spanish-speaking cultures.	Prerequisites: A grade of C or better in GBS151 and (SPA201 or permission of Department or Division). Completion of prerequisites within the last three years is required.	LEC 4.0 4.0 4.0
SPA225	Intermediate Spanish Conversation I	Continued study of vocabulary, sentence structures, and cultural awareness necessary to improve speaking and listening skills in Spanish. Emphasis on fluency and accuracy in spoken Spanish.	Prerequisites: A grade of C or better in SPA102 or SPA102AA or SPA116 or SPA116AA or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA226	Intermediate Spanish Conversation II	Continued study of vocabulary, sentence structures, and cultural awareness necessary to improve speaking and listening skills in increasingly complex Spanish. Emphasis on fluency and moderate accuracy in spoken Spanish.	Prerequisites: A grade of C or better in SPA201 or SPA225 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA235	Advanced Spanish Conversation I	Continued development of skills in conversational fluency. Class conducted completely in Spanish.	Prerequisites: A grade of C or better in SPA226 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA236	Advanced Spanish Conversation II	Further development of skills in conversational fluency. Grammar presented only to clarify student errors.	Prerequisites: A grade of C or better in SPA235 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0

SPA241	Spanish and Spanish-American Film I	Analysis of Spanish and Spanish-American film as art form and as social commentary. Includes documentary, biography, and films based on works of literature. All films, coursework, class participation, and oral and written reports conducted in Spanish.	Prerequisites: A grade of C or better in SPA202 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA242	Spanish and Spanish-American Film II	Analysis and critique of movies presented in the Spanish language and produced by cinematographers from Bolivia, Paraguay, Venezuela, Ecuador, Puerto Rico, Costa Rica and the Mexican independent film producers. Includes documentary, biography, and works of literature and their film versions as art form and social commentary.	Prerequisites: A grade of C or better in SPA241 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA251	Spanish Civilization	An introduction to Spanish civilization with a focus on the culture of Spain. History of Spain and each period's cultural manifestations, including economic, sociological, and political factors as well as cultural artifacts such as architecture, literature, visual arts, music, and gastronomy.	Prerequisites: Four years of high school Spanish or a grade of C or better in SPA202 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA265	Advanced Spanish I	Introduction and study of Spanish and Spanish-American literature. Selected readings from most Spanish-speaking countries. All discussions, oral reports, and written assignments are in Spanish.	Prerequisites: A grade of C or better in SPA202 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA266	Advanced Spanish II	Further study of Spanish and Spanish-American literature. Reading selections from most Spanish-speaking countries. All oral reports, discussions, and written reports in Spanish. Graduated level of difficulty from the literature studied in SPA265.	Prerequisites: A grade of C or better in SPA265 or permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
SPA282AA	Service-Learning Experience in Spanish	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0

SPA282AC	Service-Learning Experience in Spanish	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
SPA296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
SPA296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
SPA296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

SPA296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
SPA298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
SPA298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

SPA298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
SPH241	Spanish and Latin American Film in Translation	A survey of Spanish and Spanish-American film as art form and as social commentary. Includes documentary, biography, and films based on works of literature. Coursework, class participation, and oral and written reports conducted in English.	Prerequisites: None.	LEC 3.0 3.0 3.0
SPH245	Hispanic Heritage in the Southwest	A survey of Hispanic heritage in the Southwest. Cultural and social institutions and their contribution to the development of the region and its heritage	Prerequisites: None.	LEC 3.0 3.0 3.0
SPH296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

SPH296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
SPH296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
SPH296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0



SPH298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
SPH298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SPH298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
SSH111	Sustainable Cities	Introduction to the field of sustainability and exploration of the practices leading to the development of sustainable cities. Explores the concept of sustainable development of cities within local, regional, and global contexts.	Prerequisites: None.	LEC 3.0 3.0 3.0

SSH298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
SSH298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SSH298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
STO100	Introduction to Storytelling	Introduction to the art of storytelling. Finding, crafting and telling traditional, fact-based, and personal stories in and out of class	Prerequisites: None.	LEC 3.0 3.0 3.0

STO100AA	How to Tell Traditional Stories	Introduction to the art of storytelling. Finding, crafting and telling a traditional story in and out of class	Prerequisites: None.	LEC 1.0 1.0 1.0
STO100AB	How to Tell Fact-Based Stories	Introduction to the art of storytelling. Finding, crafting and telling fact-based stories in and out of class	Prerequisites: None.	LEC 1.0 1.0 1.0
STO100AC	How to Tell Personal Stories	Introduction to the art of storytelling. Finding, crafting and telling personal stories in and out of class	Prerequisites: None.	LEC 1.0 1.0 1.0
STO101	Storytelling for Literacy	Introduction to the natural process from oral to written language and the role of storytelling in both. Focus will be on the development and sharing of oral and written stories	Prerequisites: None.	LEC 1.0 1.0 1.0
STO145	Digital Storybook	Enables students to find and develop a narrative representing an aspect of their personal histories. Use of digital technology to produce and archive a storybook	Prerequisites: None.	L+L 1.0 2.0 2.0
STO150	Digital Storytelling	Enables students to find and develop their personal stories. Emphasis on the use of digital technology to create, edit, produce and archive a digital story	Prerequisites: None.	L+L 3.0 6.0 6.0
STO200AA	Biographical Storytelling	Exploration of the art and craft of finding, developing and telling biographical stories	Prerequisites: None.	LEC 1.0 1.0 1.0
STO202	Bilingual Storytelling	Introduction to bilingual storytelling as a genre. Research, develop, and craft bilingual stories. Find appropriate contexts and venues for telling. Assist in the integration and application of bilingual storytelling to the learning environment in the classroom.	Prerequisites: None.	LEC 3.0 3.0 3.0

STO205	Establishing a Family Storytelling Tradition	Developing a family storytelling tradition. Finding, crafting, telling and preserving the stories of family members past and present, including the traditional stories associated with the family's cultural heritages. Sharing stories in family and community contexts.	Prerequisites: None.	LEC 3.0 3.0 3.0
STO250AA	Benefiting from the Storytelling Festival Experience	Observation of master storytellers in performance. Structured observation, inquiry, and reflection in the context of a major national storytelling festival.	Prerequisites: None.	LEC 1.0 1.0 1.0
STO273	The Biblical Storytelling Tradition	Introduction to the history and practice of biblical storytelling. Overview of the oral foundation of biblical texts and teachings. Utilization of exegesis to develop and adapt stories for modern audiences. Researching, developing, and crafting Bible stories for telling. Telling biblical stories in family, community, and spiritual settings.	Prerequisites: None.	LEC 3.0 3.0 3.0
STO279	Creating and Telling Fact-Based Historical Stories	Creating and telling fact-based stories and stories from history.	Prerequisites: A grade of C or better in EDU/HUM/STO292.	LEC 3.0 3.0 3.0
STO282AA	Service-Learning Experience in Storytelling	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
STO282AB	Service-Learning Experience in Storytelling	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
STO282AC	Service-Learning Experience in Storytelling	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
STO283	The African Storytelling Tradition	Introduction to the history and practice of storytelling in Africa. Overview of African myths, legends, folktales, parables, and fables. Great story tellers and story collectors of the past and present. Researching, developing, and crafting African stories for telling	Prerequisites: None.	LEC 3.0 3.0 3.0

STO284	Storytelling and Music	Introduction to the role and importance of music in storytelling. Research, craft, and tell stories that include percussion, vocal, or instrumental elements.	Prerequisites: None.	LEC 3.0 3.0 3.0
STO285	Creating/Performing Solo/Collaborative Works	Developing, rehearsing, and performing solo and collaborative works for fringe festivals and other storytelling and theatre venues.	Prerequisites: None.	LEC 3.0 3.0 3.0
STO286	Using Storytelling in a Variety of Settings	The application of storytelling and storytelling activities in the world of health care, business, parks, museums, hospitals, and education	Prerequisites: None.	LEC 3.0 3.0 3.0
STO287	Norse and Scandinavian Storytelling Tradition	Overview of Norse and Scandinavian myths, legends, folktales. Impact of Norse and Scandinavian myth on popular culture. Researching, developing, and crafting Norse and Scandinavian stories for telling, game development, structuring graphic novels and other applications.	Prerequisites: None.	LEC 3.0 3.0 3.0
STO288	Telling Sacred Stories from Around the World	Introduction to sacred stories as a genre. Researching, developing, and crafting traditional and personal sacred stories. Finding appropriate applications and venues for telling.	Prerequisites: None.	LEC 3.0 3.0 3.0
STO289AA	Using Storytelling in Educational Settings	The application of storytelling and storytelling activities in educational settings	Prerequisites: None.	LEC 1.0 1.0 1.0
STO289AB	Using Storytelling in Business Settings	The application of storytelling and storytelling activities in business settings	Prerequisites: None.	LEC 1.0 1.0 1.0
STO289AC	Using Storytelling in Healing Settings	The application of storytelling and storytelling activities in healing settings	Prerequisites: None.	LEC 1.0 1.0 1.0
STO289AD	Using Storytelling in Interpretive Settings	The application of storytelling and storytelling activities in interpretive settings including museums, gardens, parks, and zoos	Prerequisites: None.	LEC 1.0 1.0 1.0
STO289AE	Using Storytelling in Toastmasters	The application of storytelling and storytelling activities in speaking and leadership groups such as Toastmasters.	Prerequisites: None.	LEC 1.0 1.0 1.0

STO289AF	Using Storytelling in Family Settings	The application of storytelling and storytelling activities in family settings, such as family story nights, holidays, and reunions. Emphasis on finding and sharing family stories.	Prerequisites: None.	LEC 1.0 1.0 1.0
STO289AG	Using Storytelling in Advocacy Settings	The application of storytelling and storytelling activities in contexts of advocacy and civic engagement. Focus on stories that reflect the goals and aims of a civic organization.	Prerequisites: None.	LEC 1.0 1.0 1.0
STO290	The Irish Storytelling Tradition	Introduction to the history and practice of storytelling in Ireland. Overview of Irish myths, legends, folktales, and humorous tales. Great story tellers and story collectors of the past and present. Researching, developing, and crafting Irish stories for telling	Prerequisites: None.	LEC 3.0 3.0 3.0
STO291AA	Storytelling Circle	Designed to provide opportunities for students to practice and develop critical listening and storytelling skills.	Prerequisites: A grade of C or better in EDU/HUM/STO292 or permission of Instructor.	L+L 1.0 1.5 1.5
STO292	The Art of Storytelling	Explore the art and origin of storytelling. Provide a variety of storytelling techniques, styles and exercises to enhance the delivery of telling stories. Assist in the integration and application of storytelling to the learning environment in the classroom	Prerequisites: None.	LEC 3.0 3.0 3.0
STO293	The Art of Storytelling II	Further exploration of the art of storytelling. Provide opportunities for the expansion of storytelling skills and a deeper appreciation of storytelling and its applications	Prerequisites: A grade of C or better in EDU292 or HUM292 or STO292.	LEC 3.0 3.0 3.0
STO294	Multicultural Folktales	Study of multicultural folktales, exploring the impact of the oral tradition in American society and showing classroom applications	Prerequisites: None.	LEC 3.0 3.0 3.0

STO295	Traditional Storytelling Around the World	Introduction to traditional storytelling practices around the world. Understanding the roles and techniques of traditional storytellers. Telling traditional stories ethically.	Prerequisites: None.	LEC 3.0 3.0 3.0
STO297	Creating and Telling Personal Stories	Exploration of the art and craft of finding, developing and telling personal stories.	Prerequisites: A grade of C or better in EDU292 or HUM292 or STO292.	LEC 3.0 3.0 3.0
STO298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to m	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
STO298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to m	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
STO298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to m	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

SUN101	Basic Math for Carpenters	Mathematical concepts and operations for the carpentry trade. Addition, subtraction, multiplication and division of whole, decimal, fractional and metric numbers. Linear, angular, circular, surface and volume measurements. Basic geometry	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
SUN102	Introduction to Carpentry	Overview of the carpentry trade. Apprenticeship programs and responsibilities of the apprentice. Types and uses of nails, fasteners and adhesives. Types of wood, lumber and manufactured wood products.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN101) or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
SUN103	Wall Systems	Wall systems; materials and construction with emphasis on framing techniques. Design of stud walls, panelized walls, masonry walls, post and beam walls and drywall installation. Also, technologies in fabrication and construction.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN101 and SUN102) or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
SUN104	Site Preparation I	Trade terms, local zoning and building ordinances, and plot plan layout. Installation of batter boards and establishing building lines. Set up and use of a builder's level.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN101) or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
SUN105	Reading Plans and Elevations	Construction drawings, lines, symbols, dimensions and abbreviations. Specifications and site and plot plan development. Includes plan and elevation reading exercises.	Prerequisites: (Registered apprentice status and a grade of C or better in ABC123) or permission of the Apprenticeship Coordinator.	LEC 2.0 2.0 2.0
SUN106	Floor Systems	Framing systems, floor construction, center beam and post support systems. Construction of sills, joists and bridging. Subflooring, mechanical connectors and the use of prefabricated joists.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN102) or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0



SUN108	Wall Systems, Tilt-Up	History and evolution of tilt-up construction processes. Tilt- up versus concrete block or poured in place concrete walls. Testing of concrete and preparation of the slab for tilt-up. Grading and finishing concrete slabs and forming tilt-up panels. Lifting and bracing panels.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN103) or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
SUN109	Site Preparation II	Basic field engineering including terminology, methods of land description and the use of tools and instruments. Government land survey system procedures and specific procedures for field surveying.	Prerequisites: Registered apprentice status and a grade of C or better in SUN101 and SUN104 or permission of the Apprenticeship Coordinator.	LEC 2.0 2.0 2.0
SUN110	Forming	Concrete formwork including terminology, layout, materials and tolerances. Construction forms for columns, footings, walls, beams and stairs.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN101) or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
SUN110AA	Forming (Loose) Fundamentals	Cushion cone and cam-lock forming system. Various form and scaffold bracket systems. Forming teams, snap ties, aluma gang forms. Lumber versus Laminated Veneer Lumber (LVL) strongbacks.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0
SUN111	Introduction to Light Equipment	Use, operation and maintenance of light equipment used in the construction trades. Types, assemblies, operator qualifications, controls, safety precautions, operating procedures, and maintenance of aerial lifts, skid steer loaders, trenchers, generators, compressors, compactors and forklifts	Prerequisites: None.	LEC 1.0 1.0 1.0
SUN112	Framing Fundamentals	Wall and ceiling layout procedures. Assembly and erection of exterior walls using common materials and methods. Masonry construction wall framing techniques and use of metal studs.	Registered apprentice status or permission of the Apprenticeship Coordinator.	LEC 1.0 1.0 1.0

SUN201	Reinforcing Concrete	Use of reinforced concrete and reinforcing steel. Reinforced concrete in specific settings. Reinforcing steel; bar supports, bar lists, fabrication options, cutting and bending, tying, splicing and placing bars	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
SUN202	Horizontal and Vertical Formwork	Concrete forming and shoring systems and accessories, panel and gang wall patented wall forming systems. Column patented forms, flying form systems and culvert and roof support systems. Slipforming, paving and architectural forms. Application and construction methods for various types of forming and form hardware systems for walls, columns, and stairs as well as slip forms, climbing forms, and shaft forms. Overview of assembly, erection and stripping of gang forms.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN201) or permission of the Apprenticeship Coordinator.	LEC 2.0 2.0 2.0
SUN205	Water/Damp Proofing and Ceilings	Control of moisture in a structure, including ventilation and infiltration. Interior finish of ceiling systems through sound control. Types of ceilings, required tools, blueprint reading and installation procedures	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.0 1.0 1.0
SUN207	Metal Studs and Drywall	Installation of metal framing members and gypsum dry wall. Gypsum ceiling products and installation procedures	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
SUN208	Construction Plans and Elevations	Construction drawings, plans and elevations. Lines, symbols, dimensions and abbreviations. Specifications and site and plot plan development. Includes plan and elevation reading exercises.	Prerequisites: (Registered apprentice status and a grade of C or better in SUN105) or permission of the apprenticeship coordinator.	LEC 1.5 1.5 1.5
SUN210	Windows and Exterior Doors	Types of windows, and exterior doors. Construction and parts of windows. Installation of pre-hung windows and pre-hung exterior doors. Use and installation of weather-stripping. Types of and installation of thresholds, locksets, exterior doors, and garage doors	Prerequisites: None.	LEC 1.0 1.0 1.0

SUN212	Wall and Floor Specialities	Trade terminology. Types of paneling and molding and installation procedures for each. Vinyl floor coverings and carpet installation. Hardwood flooring and installing portable partitions	Prerequisites: None.	LEC 0.5 0.5 0.5
SUN298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
SUN298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SUN298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

SUS100	Introduction to Sustainability	Introduction to the basic concepts of sustainability. Includes challenges of land, ocean, and resource management as well as the built environment. Also covers connections between global, local and personal sustainability challenges and responses at each level.	Prerequisites: None.	LEC 3.0 3.0 3.0
SUS110	Sustainable World	Introduction to the field of sustainability and exploration of the interaction between human and natural global systems. Framework for analyzing and investigating the global challenges such as land use change, competition for water and other natural resources, and renewable energy concerns and crises.	Prerequisites: None.	LEC 3.0 3.0 3.0
SUS230	Practical Skills for Sustainability Problem Solving	Introduction to professional skills in sustainability problem solving. Emphasis on four skill areas: teamwork basics, project management tools and professional behaviors, self-directed learning techniques, and stakeholder engagement. Also covers techniques for identification of challenges and conflict resolution within a sustainability project.	Prerequisites: None.	LEC 1.0 1.0 1.0
SUS231	Careers in Sustainability	Introduction to career pathways in sustainability. Exploration of career paths, development of interview skills, and resume creation covered in addition to articulation of personal interests and values related to careers in sustainability. Also includes an introduction to networking skills and job search assistance.	Prerequisites: None.	LEC 1.0 1.0 1.0
SUS232	Professional Skills in Sustainability Practice	Introduction to professional skills in sustainability through interpersonal competence. Emphasis on teamwork, project management, stakeholder engagement, communication, and continuous learning.	Prerequisites: A grade of C or better in SUS110 and SSH111 and (ENG101 or ENG107).	LEC 3.0 3.0 3.0

SWU101AA	Self-Awareness for Paraprofessional Helpers	Explores the paraprofessional helper's feelings and values, and encourages examination of one's own strengths, weaknesses and coping skills within the context of the helping relationship	Prerequisites: None.	LEC 1.0 1.0 1.0
SWU101AB	Awareness of Others for Paraprofessional Helpers	Applies the paraprofessional helper's insights about themselves within the context of knowledge about client populations, diversity, ethics, and beginning stages of assessment	Prerequisites: A grade of C or better in SWU101AA.	LEC 1.0 1.0 1.0
SWU101AC	Intervention Assessment for Paraprofessional Helpers	Introduction for the paraprofessional helper to intervention techniques, beginning communication skills, community resources, and development of action plans	Prerequisites: A grade of C or better in SWU101AB.	LEC 1.0 1.0 1.0
SWU130	Addictions and Substance Use Disorders	Sociological, psychological and physiological aspects of addictive behaviors and chemical abuse. Consideration of a variety of treatment programs offered in community agencies.	Prerequisites: None.	LEC 3.0 3.0 3.0
SWU171	Introduction to Social Work	Analysis of contemporary social welfare services and professional social work.	Prerequisites: None.	LEC 3.0 3.0 3.0
SWU181	Economics: A Social Issues Perspective	Introduction to economic principles through the lens of contemporary social issues for social work and related fields.	Prerequisites: None.	LEC 3.0 3.0 3.0
SWU182	A Social Services Perspective of Government	Government and the role of policy practice in advancing social and economic justice and effective social services within the southwest.	Prerequisites: None.	LEC 3.0 3.0 3.0
SWU183	Introductory Ethics: A Social Service Perspective	Introductory exploration of ethics from a historical and multicultural perspective viewed through the lens of contemporary social issues.	Prerequisites: None.	LEC 3.0 3.0 3.0

SWU225	Statistics for Social Research/Justice and Government	Introductory course in descriptive and inferential statistics for social research. Designed to serve as preparation for interpreting and understanding research related to Justice and Government related agencies	Prerequisites: A grade of C or better in MAT092 or completion of higher level mathematics course.	LEC 3.0 3.0 3.0
SWU250	Mindfulness for Stress Management	Introduction to the theory, research and practice behind mindfulness and stress management as it relates to quality of life issues and professional self-care. Focus on maintaining a healthy lifestyle and managing personal/professional stress by incorporating evidence based research on nutrition, mindfulness, communication, positive psychology, exercise, environmental factors contributing to wellness and disease; immune system support, activity management and developing practices that facilitate maintaining living in balance.	Prerequisites: None.	LEC 3.0 3.0 3.0
SWU258	Victimology and Crisis Management	Victimology, the criminal justice system, techniques of crisis intervention, and the importance of a multicultural and global perspective. Includes sexual assault, family violence, post-traumatic stress disorder, the role of substance abuse, effective coping skills, appropriate community resources and the responsiveness of the justice system.	Prerequisites: None.	LEC 3.0 3.0 3.0
SWU275AA	Case Report Writing I	Documentation skills for human service helpers. Includes privacy and legal issues	Prerequisites: None.	LEC 1.0 1.0 1.0
SWU282AA	Volunteerism for Social Work: A ServiceLearning Experience	Service-learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
SWU282AB	Volunteerism for Social Work: A ServiceLearning Experience	Service-learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0

SWU282AC	Volunteerism for Social Work: A ServiceLearning Experience	Service-learning field experience within private/public agencies, and citizen volunteer groups.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
SWU285	Social Services Seminar	Special topics in social services with an emphasis on current issues not covered in other Social Work courses.	Prerequisites: None.	LEC 1.0 1.0 1.0
SWU291	Social Service Delivery Systems	Purposes, structures, and delivery systems of human service agencies. Includes 40 hours of volunteer experience in local human service agencies.	Prerequisites: A grade of C or better in SWU171, or permission of Department or Division or Corequisites: SWU171.	LEC 3.0 3.0 3.0
SWU295	Effective Helping in a Diverse World	Introduction to professional helper communication skills with respect to cross-cultural practice and diversity issues, in a social work setting.	Prerequisites: None. SWU171 suggested but not required.	LEC 3.0 3.0 3.0
SWU296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
SWU296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0

SWU296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
SWU296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
SWU298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0



SWU298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
SWU298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
TCJ101	Overview of Indian Law I	Legal problems specific to American Indians and tribes, including the nature and scope of Indian law, federal Indian law and policy, the special federal-tribal relationship, Indian tribal governments, Indian tribal sovereignty, and the jurisdictional framework in Indian country.	Prerequisites: None.	LEC 3.0 3.0 3.0
TCJ102	Overview of Indian Law II	Legal problems special to American Indians and tribes. Includes criminal, civil, tax, and regulatory jurisdiction in Indian country. Rights of individual Indians, tribal economic development and Indian water, fishing, and hunting rights.	Prerequisites: A grade of C or better in TCJ101, or permission of Department or Division.	LEC 3.0 3.0 3.0
TCJ103	Tribal Court Jurisdiction	Federal judicial system, relationship of federal and tribal law, jurisdiction of federal courts and their relation to tribal courts, tribal judicial system.	Prerequisites: A grade of C or better in TCJ102, or permission of Department or Division.	LEC 3.0 3.0 3.0

TCJ104AA	Practice Court: Civil	Conduct a mock civil case, focus on all stages of trial from commencement of the action to final judgment.	Prerequisites: A grade of C or better in TCJ102, or permission of Department or Division.	LEC 3.0 3.0 3.0
TCJ104AB	Practice Court: Criminal	Conduct a criminal case, focus on all stages of trial from commencement of the action to final judgment.	Prerequisites: A grade of C or better in TCJ102, or permission of Department or Division.	LEC 3.0 3.0 3.0
TCJ203	Ethics for Tribal Courts	Rules of professional responsibility and ethical considerations pertinent to tribal courts.	Prerequisites: A grade of C or better in TCJ101.	LEC 1.0 1.0 1.0
TCJ211	Introduction to Tribal Cases and Codes	Introduction to the process of legal research. Reading and briefing cases using the Issue, Rule, Analysis, Conclusion (IRAC) approach, legal analysis of cases and codes, elements of a legal memorandum with emphasis on legal writing skills.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: (ENG101 and TCJ101) or permission of Department Chairperson or Program Director.	LEC 3.0 3.0 3.0
TCJ215	Evidence for Tribal Courts	Examination of the most commonly encountered evidentiary issues encountered in the tribal courts. Evidentiary foundations, exclusion of witnesses, recognition of hearsay, admissibility of character and prior acts evidence, privileged communications; authentication.	Prerequisites: A grade of C or better in TCJ101.	LEC 3.0 3.0 3.0
TCJ225	Legal Writing and Analysis for Tribal Courts	Development of practical and analytical skills used in basic legal research. Culminates in writing a legal memorandum.	Prerequisites: A grade of C or better in ENG101, or permission of Department Chairperson or Program Director.	LEC 3.0 3.0 3.0

TCJ298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
TCJ298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
TCJ298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Prerequisites: Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
TDR102	Construction Soft Skills I: Workplace Skills	First impressions, relationship building, and team work. Diversity in the work place. Individual and group activities	Registered apprentice status or permission of apprenticeship coordinator.	LEC 1.0 1.0 1.0

TDR104	Construction Soft Skills II: Listening and Speaking	Effective listening, speaking, reading and writing skills for the construction industry. Communication process: channel, receiver and feedback. Communication issues, problems, and noise. Business and form writing for the construction industry. On-the-job site factors. Individual and group activities	Prerequisites: A grade of C or better in TDR102.	LEC 1.0 1.0 1.0
TDR106	Construction Soft Skills III: Resolving Workplace Issues	Stress recognition and management. Time management. Critical thinking and problem solving. Conflict prevention and resolution. Annoying behavior. Coping skills. Criticism. Sexual harassment. drug, alcohol, and substance abuse. Individual and group activities	Prerequisites: A grade of C or better in TDR104.	LEC 1.0 1.0 1.0
TDR122	Basic Electrical Theory	Introduction to electrical theory, direct current (DC) circuits, series, parallel, and series-parallel circuits, DC power sources, DC motors, DC generators	Prerequisites: Permission of Instructor.	LEC 5.0 5.0 5.0
TDR125	Twelve Kilovolt Distribution Methods I	Electric power supply systems with emphasis on design, construction and maintenance of power company systems	Prerequisites: None.	LEC 5.0 5.0 5.0
TDR202	Construction Welding III	Metal arc welding processes, blueprint and weld symbol reading, joint layout preparation and welding procedures, gas-tungsten arc welding with related instruction in practice on ferrous and nonferrous metals	Prerequisites: Permission of Instructor.	L+L 3.0 5.0 5.0

TDR296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
TDR296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
TDR296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

TDR296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
TDR298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
TDR298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

TDR298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
TEC101	Analyzing Fashion Products and Markets	Understanding the profile of the fashion entrepreneur and the products and marketplace in which they compete. Emphasis on fashion merchandise and successful fashion business development	Prerequisites: None.	LEC 1.0 1.0 1.0
TEC102	Strategic Fashion Business Planning	Developing a strategy for a fashion business or fashion service. Merchandise and management planning for a fashion business entity. Emphasis on fashion merchandise and successful fashion business development	Prerequisites: None.	LEC 2.0 2.0 2.0
TEC103	Developing Your Fashion Business	Creating and understanding a financial plan, developing operating and control systems, planning growth strategies and a business plan for the Fashion Entrepreneur. Emphasis on fashion merchandise and successful fashion business development	Prerequisites: None.	LEC 2.0 2.0 2.0
TEC105	Cultural Aspects of Clothing	Psychological, aesthetic, and economic factors applied to the systematic study of dress and adornment in relationship to world cultures and the global fashion industry.	Prerequisites: None.	LEC 3.0 3.0 3.0
TEC106	History of Fashion	Consideration of historic factors influencing fashion and fashion change with special emphasis on historic costume.	Prerequisites: None.	LEC 3.0 3.0 3.0

TEC108	Basic Pattern Design	Beginning flat-pattern design techniques. Use of standard pattern styles to introduce basic patternmaking and designs.	Prerequisites: A grade of C or better in TEC110 or TEC111 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC109	Introduction to Fashion Merchandising	Explores the various levels and specialized segment of the fashion industry, the principles of fashion, the fundamentals of merchandising apparel, consumers' influence on demand and marketing activities.	Prerequisites: None.	LEC 3 3 3
TEC110	Beginning Apparel Construction	Basic apparel construction techniques. Use of commercial patterns and sewing machine in the construction of basic garments.	Prerequisites: None.	L+L 3.0 5.0 5.0
TEC111	Intermediate Apparel Construction	Intermediate clothing construction techniques. Emphasis on fit and construction details of commercial patterns.	Prerequisites: A grade of C or better in TEC110 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC112AQ	Pattern Alteration and Fit	Structural features of patterns and altering patterns to achieve proper fit. Includes figure irregularities, pattern style variations, fashion, and individual figure problems.	Prerequisites: A grade of C or better in TEC111 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC112AU	Sewing Clothing Accessories	Construction of clothing accessories for personal or professional use. Includes overview of accessories, principles of design, selection of fabrics and trims, use of commercial patterns, creation of custom patterns, construction techniques, and evaluation of accessories.	Prerequisites: A grade of C or better in TEC111 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC113	Textiles: Dyeing	Demonstrations and projects emphasizing skills and techniques in creating textile designs on fabric for fashion and interior design applications. Fabric dyeing techniques through hands-on practices such as tie dyeing, shibori dyeing and batik dyeing.	Prerequisites: None.	L+L 1.0 1.5 1.5
TEC114	Textiles: Block Printing/Silk Screening	Block printing and silk screening techniques used to create designs on fabric for apparel and interiors.	Prerequisites: None.	L+L 1.0 2.0 2.0



TEC115	Textiles: Hand Painting	Techniques used to hand paint designs on textiles for fashion and interior design. Techniques include water color and ombre, marbleizing, stenciling, stamping and various resist methods such as gutta and taping. Includes color theory and design development.	Prerequisites: None.	L+L 1.0 1.5 1.5
TEC116	Textiles: Stitchery and Embellishment	Materials and techniques used for stitchery and embellishment on textiles. Includes color schemes and design development.	Prerequisites: None.	L+L 1.0 1.5 1.5
TEC117	Beginning Quilting	Basic construction techniques used in hand and machine quilting. Includes fabric and thread selection, equipment, batting choices, fabric preparation, pattern selection, cutting methods, patchwork assembly techniques by hand and machine, finishing methods, and uses for quilted items	Prerequisites: None.	L+L 2.0 4.0 4.0
TEC120	Specialty Apparel Construction	Application of specialty fabrics in clothing construction. Emphasis on improved construction quality and garment fit.	Prerequisites: A grade of C or better in TEC111, or THP206, or permission of Instructor.	L+L 3.0 5.0 5.0
TEC121	Creative Sewing Machine Use	Use of the sewing machine for other than construction of garments or household items. Emphasis on decorative uses of the sewing machine on items made or purchased by the user	Prerequisites: None.	LEC 3.0 3.0 3.0
TEC122	Sewing with Knits	Skills and techniques used in the construction of garments made from knit fabrics.	Prerequisites: A grade of C or better in TEC111, or THP206, or permission of Instructor.	L+L 3.0 5.0 5.0
TEC124	Advanced Apparel Construction	Advanced garment construction techniques. Emphasis on lined jacket construction and working with patterned and specialty fabrics.	Prerequisites: A grade of C or better in TEC111, or THP206, or permission of Instructor.	L+L 3.0 5.0 5.0

TEC125	Fashion Design	Overview of the fashion design industry. Includes terminology, fashion trends, elements and principles of design, sources of inspiration, fabric selection, sketching and costing a collection, an introduction to pattern making techniques, and global fashion centers' design and manufacturing specialties.	Prerequisites: None.	LEC 3.0 3.0 3.0
TEC126	Sewing for the Home	Provides students systemic skills and knowledge to plan and construct draperies, shades, pillows, bedding and other home furnishings through instructional projects. Emphasizes techniques used in producing textile goods for the home.	Prerequisites: None.	LEC 3.0 3.0 3.0
TEC128	Home Upholstery	Demonstration and application of knowledge and skills involved in upholstering stools, chairs, headboards, and other home furnishings. Includes measuring and cutting upholstery fabric and sewing outdoor/indoor cushions.	Prerequisites: None.	L+L 3.0 5.0 5.0
TEC129	Sewing with a Serger	Operation of a home serger. Use in constructing, finishing, and decorating garments and home decorations. Home serger required.	Prerequisites: A grade of C or better in TEC110 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC130	Alteration of Ready Made Garments	Knowledge, skills, and techniques of altering ready-made garments for personal or professional use. Experience using a sewing machine and constructing garments assumed.	Prerequisites: A grade of C or better in TEC111 or permission of Instructor.	L+L 3.0 4.0 4.0
TEC134	Fashion Illustration I	Proportions and techniques used in drawing fashion figures and clothing. Introduction of media and illustrative styles for portfolio design, trade sketches, and fashion advertisements.	Prerequisites: None.	L+L 3.0 5.0 5.0

TEC135	Fashion Illustration II	Intermediate-level study of proportion and techniques used in drawing fashion figures, clothing, and flats. Continued study of garments, fabric textures and patterns. Development of skills in presentation drawing and commencing fashion design portfolio illustrations.	Prerequisites: A grade of C or better in TEC134 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC136	Fashion Illustration III	Advanced-level study of proportions and techniques used in drawing fashion figures, clothing, and flats. Continued study of illustrative styles for garments, fabric textures and patterns. Further development of skills in portfolio presentation.	Prerequisites: A grade of C or better in TEC135 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC138	Fashion Illustration: Menswear	Study of proportions and techniques used in drawing menswear fashion figures, clothing, accessories, and flats. Focus on the male physique and specific fitting variations of clothing. Introduction of traditional menswear fabrications and poses for tailored clothing and sportswear.	Prerequisites: A grade of C or better in TEC134 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC139	Fashion Illustration: Children's Wear	Study of proportions and techniques used in drawing children's wear fashion figures, clothing, and flats from infants through teenagers. Introduction of body and feature characteristics unique to the various ages of growth for children. Includes emphasis on common clothing styles, fabrics, effects, and details.	Prerequisites: A grade of C or better in TEC134 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC141	Fashion Design: CAD	Use of computer-assisted design (CAD) in the fashion design industry. Create and illustrate fashion designs using these applications. Color and design principles applied in creating an apparel line and developing a portfolio	Prerequisites: None.	L+L 2.0 2.0 2.0

TEC143	Industrial Sewing I	Introduction to industrial sewing machine usage for straight-stitch, zigzag, over-lock, cover stitch and blind-hem machines. Use in constructing, finishing, and decorating apparel and home decor.	Prerequisites: A grade of C or better in TEC111 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC144	Industrial Sewing II	Advanced use of industrial sewing machines for straight-stitch, zigzag, over-lock, cover stitch and blind-hem machines. Advanced use and methods in constructing, finishing, and decorating apparel and home decor.	Prerequisites: A grade of C or better in TEC143 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC146	Manufacturing Sewing Methods I	Introduction to skills and techniques of sewing for apparel manufacturing ready-made-garments. Focus on applying correct clothing construction methods required to achieve the right quality level for the apparel customer using the proper commercial design and materials.	Prerequisites: A grade of C or better in TEC144 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC147	Manufacturing Sewing Methods II	Advanced skills and techniques of sewing for apparel manufacturing ready-made-garments. Advanced application of correct clothing construction methods required to achieve the right quality level for the apparel customer using the proper commercial design and materials.	Prerequisites: A grade of C or better in TEC146 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC150	Fashion Show Production	Students will learn and experience real-time production techniques and skills of a fashion show. Includes but not limited to, budget planning, project management, marketing, staffing, décor, staging, and production.	Prerequisites: None.	L+L 3.0 4.0 4.0
TEC151	Display and Visual Merchandising	An examination of the principles of design including line, color, balance, and texture as they relate to the display of merchandise. Participation in displays, field trips, and individual projects	Prerequisites: None.	L+L 3.0 4.0 4.0

TEC160	Draping Form Construction Laboratory	Creation of a draping form utilizing the exact measurements of the student for use in fashion design	Prerequisites: None.	LAB 1.0 2.0 2.0
TEC161	Digital Machine Embroidery Laboratory	Use of the sewing machine and computer for development of decorative designs for garment and fabric design	Prerequisites: None.	LAB 1.0 2.0 2.0
TEC162	Product Development Laboratory	Focus on current trends in fashion product development; methods and techniques to translate design ideas into a realistic production product	Prerequisites: A grade of C or better in TEC125 or permission of Instructor.	LAB 1.0 1.0 1.0
TEC170	Fashion Merchandising Topics	Current issues affecting the fashion merchandising industry	Prerequisites: None.	LEC 1.0 1.0 1.0
TEC171	Fashion Design Topics	Current issues affecting the fashion design industry	Prerequisites: None.	LEC 1.0 1.0 1.0
TEC200	Retail Buying	Examines management/buyer role in investment, pricing, planning, controlling sales and inventories Any BPC/CIS spreadsheet course recommended	None Any BPC/CIs spreadsheet course recommended.	LEC 3.0 3.0 3.0
TEC217	Advanced Quilting	Advanced techniques used in hand and machine quilting. Includes fabric selection, batting choices, fabric preparation, pattern selection, cutting methods, advanced patchwork and applique assembly techniques by hand and machine, whole-cloth quilting, finishing methods, and uses for quilted items	Prerequisites: A grade of C or better in TEC117 or permission of Instructor.	L+L 2.0 4.0 4.0
TEC221	Computer-Assisted Fashion Design	The use of computer hardware and software in the fashion design industry. Create and illustrate fashion designs using computer hardware and software. Color and design principles applied in creating an apparel line and developing a portfolio.	Prerequisites: A grade of C or better in (TEC125 and TEC134) or permission of Instructor.	L+L 3.0 5.0 5.0
TEC222	Textiles	Study of textile fibers, yarns, fabrication, color and finishes and their impact on product performance. Includes labeling laws, fiber manufacturing processes, technical textiles, fiber properties, care, end use, and global sustainability efforts.	Prerequisites: None.	L+L 3.0 4.0 4.0

TEC223	Tailoring	Principles of tailoring as applied in the construction of a coat or suit. Alteration of patterns and fitting techniques.	Prerequisites: A grade of C or better in TEC124 or permission of Instructor.	L+L 3.0 6.0 6.0
TEC224	Pattern Drafting	Draft patterns from measurements of dress forms and human figures. Development of slopers and garment patterns. Design and produce an original garment using pattern drafting techniques.	Prerequisites: A grade of C or better in TEC111 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC225	Pattern Design I	Creation of pattern designs by flat pattern methods. Produce a variety of styles. Production of an original pattern design and garment.	Prerequisites: A grade of C or better in TEC111, or THP206, or permission of Instructor.	L+L 3.0 5.0 5.0
TEC226	Draping for Fashion Design	Manipulation of fabrics on a dress form and/or live figure to create designs and patterns. Use of woven fabrics to create basic and intermediate designs. Introduction of knitwear draping. Drape and construct an original design.	Prerequisites: A grade of C or better in TEC111, or THP206, or permission of Instructor.	L+L 3.0 5.0 5.0
TEC227	Couture Sewing	Construction techniques used in couture sewing. Includes fabric selection, fabric preparation, hand sewing, garment shaping, edge finishes, embellishments, and closures. Emphasis on fitting and couture construction techniques used to construct skirts, pants, blouses, dresses, sleeves, pockets, jackets, coats, and evening wear.	Prerequisites: A grade of C or better in TEC111, or THP206, or permission of Instructor.	L+L 3.0 5.0 5.0
TEC228	Advanced Draping for Fashion Design	Advanced draping techniques for fashion design. Includes draping jackets/coats, shorts/pants, dresses/gowns and other woven fabrics. Also includes draping swimwear/leotards and other garments in knit fabrics. Drape and construct an original design.	Prerequisites: A grade of C or better in TEC226 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC229	Advanced Serging	Operation of a home serger in advanced application of construction and embellishment for garments and home decoration projects. Home serger required.	Prerequisites: A grade of C or better in TEC129 or permission of Instructor.	L+L 3.0 5.0 5.0

TEC230	Pattern Design II	Practical application in designing clothing/patterns using flat pattern method. Principles of flat pattern and use of sloper reviewed. Includes creation of woven and knit original designs.	Prerequisites: A grade of C or better in TEC225 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC231	Pattern Grading	Grading patterns to change sizes. Includes grading terminology, grading methods, figure types, grading charts, types of grade, even and uneven grades, and grading basic and intermediate designs.	Prerequisites: A grade of C or better in TEC111 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC232	Costume Construction	Costume construction techniques applied to period reproduction, vintage, fantasy and anime; stage and dance costumes. Includes alteration of commercial patterns, drafting of original patterns, and fitting techniques.	Prerequisites: A grade of C or better in TEC111 and (TEC224 or TEC225 or TEC226 or permission of Instructor).	L+L 3.0 5.0 5.0
TEC233	Computer-Assisted Pattern Making	Pattern making using the computer and various software programs. Includes measuring, block patterns, pattern development, production patterns, modifications for size and fit, and markers	Prerequisites: A grade of C or better in TEC225 or permission of Instructor.	L+L 3.0 5.0 5.0
TEC234	Vintage Fashion Design	Research of 20th-century fashions from the 1920s through the 1990s influencing vintage garment styles. Analysis of vintage era and revival trends. Development and construction of an original vintage garment/ensemble including design, fabric selection, and commercial pattern use with flat-patternmaking and/or draping variations.	Prerequisites: A grade of C or better in (TEC225 or TEC226) or permission of Instructor.	L+L 3.0 5.0 5.0
TEC235	Custom Tailored Pants	Designed for the home sewing enthusiast or dressmaker who desires a perfectly fitted pant pattern. Pattern adjustments; selecting proper size; fitting procedures for a personalized pant. Fabric draft of the basic pant to be fitted on each student	Prerequisites: A grade of C or better in TEC111 or equivalent.	L+L 2.0 3.0 3.0

TEC236	Portfolio Development	This course is designed to assist students in the preparation and presentation of an original professional portfolio. Students will design, produce, and present artistic sketches and illustrations of fashion figures wearing designs, flats for garment designs, and fabric swatches/samples selected for designs. Including but not limited to using computer-assisted design software, presentation boards, and other required components in the field of portfolio development.	Prerequisites: A grade of C or better in TEC134 and permission of Department or Division. TEC221 is recommended.	LAB 1.0 3.0 0.0
TEC238	Industry Patternmaking Standards	Study of patternmaking techniques for industry. Specifications for production patterns, labeling methods, and direction cards.	Prerequisites: A grade of C or better in TEC225 or permission of Instructor.	L+L 1.0 2.0 2.0
TEC240	Apparel Production Management	Overview of apparel production management for the global marketplace examining component details of the technical package, tech-pack, which include specifications and costing in the most time-efficient manner.	Prerequisites: None.	L+L 2.0 3.0 3.0
TEC241	Advanced Computer-Assisted Fashion Design	Advanced techniques and use of computer hardware and software in the fashion design industry. Create and illustrate fashion designs using multiple computer applications. Create advanced textile surface pattern design using color and design principles on the computer. Manipulate CAD pattern design for original patterns, grading, and markers. Create storyboards for product development and personal portfolio	Prerequisites: A grade of C or better in TEC124 and TEC221.	L+L 3.0 5.0 5.0
TEC244	Industrial Sewing III	Mastery study of industrial sewing machine usage for straight-stitch, zigzag, over-lock, cover stitch and blind-hem machines. Use in detailed or complex constructing, finishing, and decorating apparel and home decor.	Prerequisites: A grade of C or better in TEC144 or permission of Instructor.	L+L 2.0 3.0 3.0



TEC245	Wardrobe Strategies	Methods of clothing selection, coordination, evaluation, and planning to meet men's and women's wardrobe needs.	Prerequisites: None.	LEC 3.0 3.0 3.0
TEC247	Manufacturing Sewing Methods III	Mastery knowledge, skills, and techniques of sewing for apparel manufacturing ready-made-garments. Mastery level application of correct clothing construction methods required to achieve the right quality level for the apparel customer using the proper commercial design and materials.	Prerequisites: A grade of C or better in TEC147 or permission of Instructor.	L+L 2.0 3.0 3.0
TEC250	Apparel Quality Analysis	Quality analysis of construction components that affect the appearance, function, and cost of ready-to-wear apparel	Prerequisites: None.	LEC 3.0 3.0 3.0
TEC252	Aesthetics and Beauty Merchandising	Surveys the structure and operation of the cosmetic (beauty) and fragrance industry and the aesthetics of cosmetology in the fashion industry. Emphasizes the global nature of cosmetic and aesthetic merchandising and marketing techniques.	Prerequisites: A grade of C or better in MKT/TEC109.	LEC 3.0 3.0 3.0
TEC255	Fashion Retail Merchandising	Surveys the structure and operation of fashion retail organizations. Emphasizes the global nature of fashion merchandising and techniques of merchandising for the fashion merchandising major.	Prerequisites: A grade of C or better in MKT/TEC109.	LEC 3.0 3.0 3.0
TEC260	Fashion Sales Management	Emphasizes the fashion aspects of sales, and the application and management of a sales force for the fashion industry.	Prerequisites: A grade of C or better in MKT/TEC109.	LEC 3.0 3.0 3.0
TEC270	Design Studio	Design and production of original garments for a line/collection. Includes design inspirations, sketches/illustrations, fabric/materials selection, pattern development, construction and fit.	Prerequisites: A grade of C or better in (TEC225 or TEC226) or permission of Instructor.	LAB 3.0 4.0 4.0
TEC271AA	Fashion Design Internship	Work experience in fashion design business or industry. Work hours are coordinated for a minimum of 80 hours per semester. Supervision and evaluation by internship coordinator.	Prerequisites: Permission of Department or Division.	LAB 1.0 5.0 0.0

TEC271AB	Fashion Design Internship	Work experience in fashion design business or industry. Ten hours of work weekly. Supervision and evaluation by an internship coordinator	Prerequisites: Permission of Department or Division.	LAB 2.0 10.0 0.0
TEC271AC	Fashion Design Internship	Work experience in fashion design business or industry. Fifteen hours of work weekly. Supervision and evaluation by an internship coordinator	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 0.0
TEC272AA	Retail Merchandising Internship	Retail Merchandising work experience in a Fashion Retail business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 1.0 1.0 0.0
TEC272AB	Retail Merchandising Internship	Retail Merchandising work experience in a Fashion Retail business or industry. Supervision and evaluation by an internship coordinator Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 2.0 2.0 0.0
TEC272AC	Retail Merchandising Internship	Retail Merchandising work experience in a Fashion Retail business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 3.0 3.0 0.0
TEC274AA	Fashion Merchandising Study Tour	A tour of the fashion merchandising industry outside the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance awareness of this multifaceted career	Prerequisites: Permission of Department or Division.	LAB 1.0 5.0 1.0

TEC274AB	Fashion Merchandising Study tour	A tour of the fashion merchandising industry outside the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance awareness of this multifaceted career.	Prerequisites: Permission of Department or Division.	LAB 2.0 10.0 2.0
TEC274AC	Fashion Merchandising Study Tour	A tour of the fashion merchandising industry outside the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance awareness of this multifaceted career	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 3.0
TEC275AA	Image Consultant Internship	Image Consultant work experience in a Fashion Retail business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 1.0 1.0 0.0
TEC275AB	Image Consultant Internship	Image Consultant work experience in a Fashion Retail business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 2.0 2.0 0.0
TEC275AC	Image Consultant Internship	Image Consultant work experience in a Fashion Retail business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 3.0 3.0 0.0

TEC277AA	Alteration Internship	Alteration work experience in a business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 1.0 1.0 0.0
TEC277AB	Alteration Internship	Alteration work experience in a business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 2.0 2.0 0.0
TEC277AC	Alteration Internship	Alteration work experience in a business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 3.0 3.0 0.0
TEC278AA	Costume Design and Production Internship	Costume Design and Production work experience in a business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify) or permission of Instructor	LAB 1.0 1.0 0.0
TEC278AB	Costume Design and Production Internship	Costume Design and Production work experience in a business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 2.0 2.0 0.0

TEC278AC	Costume Design and Production Internship	Costume Design and Production work experience in a business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.	Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student's academic or career goals (student's present job may qualify); or permission of Instructor.	LAB 3.0 3.0 0.0
TEC282AA	Service-Learning in Fashion Merchandising and Design	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
TEC282AB	Service-Learning Experience in Fashion Merchandising and Design	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
TEC282AC	Service-Learning Experience in Fashion Merchandising and Design	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
TEC296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

TEC296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
TEC296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
TEC296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

TEC298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
TEC298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
TEC298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
THE111	Introduction to Theatre	A survey of theatre, including basic elements and principles of production, styles, and/or historical perspectives of theatre, dramatic literature, and criticism	Prerequisites: None.	LEC 3.0 3.0 3.0

THE118	Playwriting	Practice and study of theories and techniques of writing for the stage; creating characters, dialogue, and plot for monodramas, scenes, and plays	Prerequisites: None.	L+L 3.0 3.0 3.0
THE220	Modern Drama	Analysis of dramatic literature studied within political, historical, and cultural contexts and examined from the perspective of the playwright's structure and style.	Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.	LEC 3.0 3.0 3.0
THE260	Film Analysis	Understanding and enjoyment of film and its correlation to literature, art, music, and other disciplines	Prerequisites: None.	LEC 3.0 3.0 3.0
THE274AA	Theatre Study Tour	A tour that focuses on theatre production outside of the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance knowledge about theatre production	Prerequisites: Permission of Department or Division.	LAB 1.0 5.0 1.0
THE274AB	Theatre Study Tour	A tour that focuses on theatre production outside of the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance knowledge about theatre production	Prerequisites: Permission of Department or Division.	LAB 2.0 10.0 2.0
THE274AC	Theatre Study Tour	A tour that focuses on theatre production outside of the metropolitan Phoenix area. Includes a variety of experiences and activities to enhance knowledge about theatre production	Prerequisites: Permission of Department or Division.	LAB 3.0 15.0 3.0
THE282AA	Service-Learning Experience in Theatre	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
THE282AB	Service-Learning Experience in Theatre	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
THE282AC	Service-Learning Experience in Theatre	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0



THE296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
THE296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
THE296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0

THE296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0
THE298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
THE298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

THE298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
THF115	Makeup for Stage and Screen	Purposes, materials, and techniques of makeup for stage and screen.	Prerequisites: None.	L+L 3.0 4.0 4.0
THF120AA	Audition Techniques for Stage and Screen: Prepared Monologue	Practice in the techniques of auditioning for stage and screen. Identifies and illustrates techniques of the prepared monologue audition.	Prerequisites: None.	L+L 1.0 2.0 2.0
THF120AB	Audition Techniques for Stage and Screen: Cold Readings	Practice in the techniques of auditioning for stage and screen. Identifies and illustrates techniques of the cold reading audition.	Prerequisites: None.	L+L 1.0 2.0 2.0
THF130	Combat for Stage and Screen	Fundamental techniques and terminology of staged combat with and without weapons. Analysis and performance of safely choreographed violence that tells a story for stage and screen.	Prerequisites: None.	L+L 3.0 4.0 4.0
THF205	Introduction to Cinema	Survey of the history and development of the art of motion pictures, including criticism of aesthetic and technical elements.	Prerequisites: None.	LEC 3.0 3.0 3.0
THF206	Introduction to Television Arts	History and development of electronic media and its impact on popular arts.	Prerequisites: None.	LEC 3.0 3.0 3.0
THF209	Acting for the Camera	Special technical aspects of acting before a camera.	Prerequisites: A grade of C or better in THP112 or permission of Instructor.	L+L 3.0 4.0 4.0
THF210	Contemporary Cinema	A study of contemporary films, directors and critics with emphasis on evaluating film as an art form.	Prerequisites: None.	LEC 3.0 3.0 3.0

THF215	Advanced Makeup Techniques for Stage and Screen	Advanced character analysis and makeup design for stage and screen. Technical application of makeup for stage and screen.	Prerequisites: A grade of C or better in THF115.	L+L 3.0 4.0 4.0
THF216	Wig and Hair Production for Theatre and Film	Introduction to wig technology, including the use of tools and techniques for making, ventilating, measuring, and styling period wigs.	Prerequisites: None.	L+L 3.0 4.0 4.0
THF219	Advanced Acting for the Camera	Focuses on special technical aspects of advanced acting before a camera.	Prerequisites: A grade of C or better in THF209 or permission of Instructor.	L+L 3.0 4.0 4.0
THF260	Theatrical Design: Rendering	Provides experience and explores multiple illustration techniques used to communicate ideas in entertainment production. Provides basic skills including pictorial drawing and sketching.	Prerequisites: None.	L+L 2.0 4.0 4.0
THP102	Theatre Service Practicum	Use and develop theatrical skills for service to the community through practical experience.	Prerequisites: Permission of Department or Division.	LAB 1.0 2.0 2.0
THP112	Acting I	Fundamental techniques and terminology of acting through physical and vocal expression, improvisation, and monologue and scene work. Emphasis on characterization.	Prerequisites: None.	L+L 3.0 4.0 4.0
THP131	Stage Movement	Movement skills for the actor to develop a flexible, expressive physical instrument. Includes pantomime, physical isolation, and awareness exercises	Prerequisites: None.	L+L 3.0 4.0 4.0
THP151	Theatre for Youth	Principles and techniques of selecting plays, adapting stories, playwriting, directing, designing, producing, and acting in theatre for youth. The course will provide the opportunity to analyze and experience the production process from creating a script to performing a theatre production for a youth audience.	Prerequisites: None.	L+L 3.0 4.0 4.0

THP201AA	Theatre Production I	Designed to give college credit to the cast and technical production crews of college theatre productions.	Prerequisites: None.	LAB 1.0 2.0 2.0
THP201AB	Theatre Production II	Designed to give college credit to the cast and technical production crews of college theatre productions.	Prerequisites: None.	LAB 2.0 4.0 4.0
THP202	Theatre Production Projects	The objective of this course is to provide hands-on experience in the creation of a theatrical production. This course is tailored around the work done on a production. Structured to provide the student with an atmosphere of professional expertise and guidance. Professional-type facilities and equipment are made available for student use.	Prerequisites: None.	LAB 1.0 2.0 0.0
THP202AA	Theatre Production I Scene Shop	The objective of this course is to provide hands-on experience in the creation of a theatrical production. This course is tailored around the work done in a Theatre Scenic Shop. Structured to provide the student with an atmosphere of professional expertise and guidance. Professional-type facilities and equipment are made available for student use.	Prerequisites: None.	LAB 1.0 2.0 0.0
THP202AB	Theatre Production I Electrics	The objective of this course is to provide hands-on experience in the creation of a theatrical production. This course is tailored around the work done in a Theatre Electric Shop. Structured to provide the student with an atmosphere of professional expertise and guidance. Professional-type facilities and equipment are made available for student use.	Prerequisites: None.	LAB 1.0 2.0 0.0

THP202AC	Theatre Production I Costume Shop	The objective of this course is to provide hands-on experience in the creation of a theatrical production. This course is tailored around the work done in a Theatre Costume Shop. Structured to provide the student with an atmosphere of professional expertise and guidance. Professional-type facilities and equipment are made available for student use.	Prerequisites: None.	LAB 1.0 2.0 0.0
THP202AD	Theatre Production Advanced Projects	The objective of this course is to provide hands-on experience in the creation of a theatrical production. This course is tailored around the work done in a leadership role on a theatrical production. Structured to provide the student with an atmosphere of professional expertise and guidance. Professional-type facilities and equipment are made available for student use.	Prerequisites: None.	LAB 1.0 2.0 0.0
THP203	Technical Theatre Production	Designed to give college credit to the technical production crews of college theatre productions.	Prerequisites: None.	LAB 3.0 6.0 6.0
THP206	Introduction to Costume Construction for Theatre	Introduction to basic principles used in costuming for theatre including the use of tools and techniques for costume construction, understanding of fabrics and materials, and a selected survey of historical fashion.	Prerequisites: None.	LEC 4.0 4.0 4.0 LAB 0.0 2.0 2.0
THP208	Costume Play Solo Performance Practicum	Introduction to Costume Play (Cosplay) skills for the creation of a solo based performance through practical experience. Focus on the origins of Cosplay and use of tools for prop and costume development, design and application of make-up, safety practices, character development and performance, and growing a social presence for promotion.	Prerequisites: None.	L+L 3.0 4.0 4.0

THP209	Costume Play Group Performance Practicum	Introduction to Costume Play (Cosplay) skills for the creation of a group based performance through practical experience. Focus on the development and collaborative performance of Cosplay characters within a canon/shared world. Use of tools for prop and costume development, design and application of make-up, safety practices, and growing a social presence for promotion.	Prerequisites: None.	L+L 3.0 4.0 4.0
THP211	Creative Drama	Theory and practice of creative drama, including improvisation, storytelling, puppetry, and script and program development in drama, and their application to elementary and secondary school levels	Prerequisites: None.	LEC 3.0 3.0 3.0
THP211AA	Creative Drama: Improvisation	Theory and practice of creative drama, including improvisation. Covers improvisation theatre-based activities. Emphasis on application in elementary and secondary school levels	Prerequisites: None.	LEC 1.0 1.0 1.0
THP211AB	Creative Drama: Storytelling/ Puppets	Theory and practice of creative drama in storytelling and puppetry. Covers use of puppets to enhance storytelling skills. Emphasis on application in elementary and secondary school levels	Prerequisites: None.	LEC 1.0 1.0 1.0
THP211AC	Creative Drama: Script Development	Theory and practice of creative drama in script development. Covers creation and adaptation of dramatic materials from a variety of sources. Emphasis on application in elementary and secondary school levels	Prerequisites: None.	LEC 1.0 1.0 1.0
THP212	Acting II	Fundamental techniques of acting through script analysis, rehearsal, and performance	Prerequisites: A grade of C or better in THP112 or permission of Department or Division.	L+L 3.0 4.0 4.0

THP213	Introduction to Technical Theatre	Procedures of technical theatre production and demonstration. Topics include design and construction of scenery, lighting, and properties.	Prerequisites: None.	LEC 4.0 4.0 4.0 LAB 0.0 2.0 2.0
THP214	Directing Techniques	Contemporary theory and practice in directing, the evolution of present-day directing procedures, and a sampling of scripts for directing practice. Principles of script analysis, blocking, casting, rehearsing, and performing.	Prerequisites: A grade of C or better in THP112 or THE220, or permission of Instructor.	L+L 3.0 4.0 4.0
THP216	Beginning Stage Lighting	Basic theories and methods of stage lighting for all production types. Emphasis on technical/theoretical facts, artistic/design concept development, and "teamwork" structure of theatre. Examines stage lighting optics, instrument selection and application, color theory, circuiting and control systems, and basic design	Prerequisites: A grade of C or better in THP213 or permission of Instructor.	L+L 3.0 4.0 4.0
THP217	Introduction to Design Scenography	The role of the theatre designer in creating scenic, lighting, costume, sound, and multimedia effects for stage productions. Elements of the design process and communication of dramatic themes and visions to the audience.	Prerequisites: None.	L+L 3 4.0 4.0
THP219	Introduction to Puppetry	Use of different types of puppets in a variety of performance settings. Practical experience with diverse audiences	Prerequisites: None.	L+L 3.0 4.0 4.0
THP225	Visual Script Analysis	Theory and practice in analysis of dramatic literature for the technician and designer. Emphasis on techniques of script analysis for visual information.	Prerequisites: None.	LEC 2.0 2.0 2.0
THP226	Theatrical Design: Costuming	Basic techniques involved in researching and designing costumes for the stage.	Prerequisites: None.	L+L 3.0 4.0 4.0
THP241	Oral Interpretation of Literature	The study, analysis, and preparation for performance of prose, poetry, and dramatic literature. Preparation of material for public audiences.	Prerequisites: A grade of C or better in ENG101 or ENG107.	LEC 3.0 3.0 3.0



THP246	Digital Fabrication	Introduction to concepts and application of computer visualization, modeling, and rapid prototyping for interdisciplinary arts. Students will design sculptures applying 3D computer modeling techniques, rapid prototyping, and other available digital output devices to produce solid models.	Prerequisites: None.	L+L 3.0 6.0 6.0
THP250	Stage Properties	Introduction to stage properties including design, construction and maintenance features. Provides skills in property design and construction using an assortment of standard materials.	Prerequisites: None.	L+L 3.0 4.0 4.0
THP251	Safety Practices in Theatre and Film Production	Safety practices in theatre and film production. Includes Focus on national safety organizations and production practices of theatre stages and soundstages, theatrical rigging, electrical, scenic construction, paint and chemical handling, automation, special effects, welding, and personal safety practices.	Prerequisites: None	L+L 1.0 2.0 2.0
THP261	Previsualization Modeling	Provides experience and explores basic previsualization methods used to communicate ideas in entertainment preproduction. Provides basic models skills.	Prerequisites: None.	L+L 2.0 4.0 4.0
THP262	Entertainment Industry Design Drafting	The fundamentals of drafting for the Entertainment Industry. Includes drafting equipment, geometry, lettering, symbols, drawings (orthographic, isometric, oblique, sectional) and standard drawings used in the entertainment industry including floor plans, sections, elevations, working drawings, and perspective.	Prerequisites: None.	L+L 3.0 6.0 6.0

THP263	Entertainment Industry Drafting I: 2D CAD	Introduction to Computer Aided Drafting (CAD) for the Entertainment industry, including stage, screen and television venues, using CAD software. Includes basic set-ups, formats, two-dimensional drawing and editing commands, dimensions, text, and plotting typical to entertainment industries.	Prerequisites: None.	L+L 3.0 6.0 6.0
THP264	Entertainment Industry Design II: 3D CAD	Introduction to construction, manipulating, and rendering three-dimensional (3D) objects and theatrical stage spaces using CAD software and post-production software.	Prerequisites: A grade of C or better in THP263.	L+L 3.0 6.0 6.0
THP265	Introduction to Stage Management	The focus of this course is the role of the stage manager. Topics include all aspects of preparation and implementation of rehearsals and performances for the stage manager position.	Prerequisites: None.	L+L 3.0 6.0 6.0
THP266	Production Careers in Technical Theatre	Provides the continuing design, stage management and technical student with opportunities to explore the versatility of the job opportunities within the Tech Theatre industry. Emphasis on presenting the work and talent both in person and on paper. Development of a professional resume and vita.	Prerequisites: None.	L+L 1.0 2.0 2.0
THP267	Painting Techniques for Film, TV and Theatre	Theory and skills in scenic artistry. Techniques of painting two-dimensional and three-dimensional scenery, tools, and the use of color	Prerequisites: A grade of C or better in THP213.	L+L 3.0 4.0 4.0

THP268	Opportunities in Production	Provides the continuing design student, dramaturge, stage management, technical director, and directing students with opportunities to expand the versatility of professional skills. Emphasis on relating their work to the total production process. Linking design ideas to production concept. Maintain dramaturge, stage manager, director documentation. Practical application of student work for portfolio development.	Prerequisites: Permission of Department or Division.	L+L 3.0 6.0 6.0
THP269	Technical Theatre Portfolio Development	The analysis and preparation of all elements of a Technical Theatre/Design Portfolio including the use of digital portfolios and application to specific disciplines. Practice with portfolio presentation and maintaining and updating portfolio materials.	Prerequisites: None.	L+L 1.0 1.0 1.0
THP270	Musical Theatre Workshop	Workshop in the study and performance of Musical Theatre repertoire. Includes audition techniques, stage directions, character role development, rehearsal techniques, vocal acting styles and vocal technique, stage movement, crew roles, and performance.	Prerequisites: None.	L+L 2.0 5.0 5.0
THP270AA	Musical Theatre Workshop	Workshop in the study and performance of musical theatre repertoire. Includes audition techniques, stage directions, character role development, rehearsal techniques, vocal acting styles and vocal technique, stage movement, crew roles, and performance.	Prerequisites: None.	LAB 1.0 3.0 3.0
THP271	Voice and Diction	Exercises and techniques to free the voice and improve projection, resonance, and articulation. Covers international phonetic alphabet and standard stage speech	Prerequisites: None.	LEC 3.0 3.0 3.0

THP273	Musical Theatre Production	Principles and techniques for musical theatre production performance. Includes audition techniques, stage directions, character role development, rehearsal techniques, vocal acting styles and vocal technique, stage movement, crew roles, and performance.	Prerequisites: By audition.	LAB 1.0 5.0 5.0
THP281	Production and Acting I	Provides the continuing acting student with opportunities to expand the versatility of characterization skills. Emphasis on relating the actor's work to the total production process. Performance of monologues, scenes, and one-act plays.	Prerequisites: Permission of Department or Division.	L+L 3.0 4.0 4.0
THP282	Production and Acting II	Provides the continuing acting student with opportunities to expand the versatility of characterization skills. Emphasis on relating the actor's work to the total production process. Performance of monologues, scenes, and one-act plays	Prerequisites: A grade of C or better in THP281 or permission of Department or Division.	L+L 3.0 4.0 4.0
THP285	Creating/Performing Solo/Collaborative Works	Developing, rehearsing, and performing solo and collaborative works for fringe festivals and other storytelling and theatre venues.	Prerequisites: None.	LEC 3.0 3.0 3.0
THP291AA	Summer Conservatory: Stage Movement	Techniques of body centering, coordination, relaxation, energization, and physical expression for the actor.	By audition and interview only.	L+L 1.0 2.0 2.0
THP291AB	Summer Conservatory: Voice and Diction	Basic principles and techniques of voice production and stage speech for the actor.	Prerequisites: By audition and interview only.	L+L 1.0 2.0 2.0
THP291AC	Summer Conservatory: Script Analysis (ACT)	Theory and practice in analysis of dramatic literature for the actor. Emphasis on techniques of character analysis for interpretation.	By audition and interview only.	LEC 1.0 1.0 1.0
THP291AD	Summer Conservatory: Improvisation	Techniques of improvisation to develop the actor's creativity. Emphasis on inner resources, sensory memory, and emotional memory.	By audition and interview only.	L+L 1.0 2.0 2.0

THP291AE	Summer Conservatory: Scene Study	Basic methodology and process of rehearsing and creating a character through prepared scenes for faculty critique and analysis.	Prerequisites: By audition and interview only.	L+L 3.0 4.0 4.0
THP291AF	Summer Conservatory: Career Development (ACT)	Principles of the business of being an actor. Emphasis on audition techniques.	Prerequisites: By audition and interview only.	L+L 1.0 2.0 2.0
THP291AG	Summer Conservatory: Production (ACT)	Practicum in rehearsal and stage performance through public productions.	Prerequisites: By audition and interview only.	L+L 4.0 5.0 5.0
THP292AA	Summer Conservatory: Theatre Technology	Theory and practice of technical phases of play production. Includes applications in scenery, properties, and lighting.	Prerequisites: By interview only.	L+L 3.0 4.0 4.0
THP292AB	Summer Conservatory: Projects	Independent supervised studies in technical theatre applications. Emphasis on topic selection addressing individual student interests and abilities.	Prerequisites: By interview only.	L+L 3.0 4.0 4.0
THP292AC	Summer Conservatory: Script Analysis (TECH)	Theory and practice in analysis of dramatic literature as preparation for technical production applications.	Prerequisites: By interview only.	LEC 1.0 1.0 1.0
THP292AD	Summer Conservatory: Career Development (TECH)	Techniques of preparation and presentation of professional materials for the theatre technician and designer.	Prerequisites: By interview only.	L+L 1.0 2.0 2.0
THP292AE	Summer Conservatory: Production (TECH)	Practicum in various aspects of technical theatre production for public performance.	Prerequisites: By interview only.	L+L 4.0 5.0 5.0
THP296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

THP296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0
THP296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
THP296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

THP298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
THP298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
THP298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

TLT100	Telecommunications Math	Application of the scientific calculator to solve mathematical problems in telecommunications electronics. Scientific notation, engineering notation, metric conversion, algebraic equations, linear equations, graph interpretation, exponents, logarithmic expressions and, binary/hexadecimal concepts related to subnetting.	Prerequisites: A grade of C or better in college-level math course, or appropriate District placement, or permission of Department/Division Chair.	LEC 2.0 2.0 2.0
TLT101	Introduction to Telecommunications	Introduction to the field of telecommunications. Telecommunications history , emerging technologies, career opportunities, customer service principles, and Internet research methods are discussed. Overview of telecommunications concepts, terminology, and communications systems, which include basic principles related to data, voice, and video transmissions	Prerequisites: None.	LEC 3.0 3.0 3.0
TLT102	Transmission Systems	Overview of telecommunications transmission systems. Examination of components that make-up transmission systems. Explore characteristics, advantages, and disadvantages of various systems	Prerequisites: A grade of C or better in TLT101.	LEC 3.0 3.0 3.0
TLT105	Cable (TV) Telecommunications I	Overview of cable systems that trace the signal from a source to customers' premises. Procedures and methods for performing aerial /underground drops and interior/exterior dwelling installations. Instruction related to: safety procedures, proper tool usage, installation techniques, signal level meter, signal level calculations, signal leakage, powering, splicing, amplifier distribution theory, and CATV troubleshooting.	Prerequisites: None. TLT101 suggested but not required for students with no prior telecommunications experience.	L+L 3.0 3.0 3.0



TLT115	Telecommunications Electronics I	Direct current electrical theory, practical lab experience, and application of mathematic principles, which include basic algebra, scientific notation, and metric conversions. Analysis of series, parallel, and series-parallel circuits using Ohm's Law, Kirchhoff's Laws, and power formulas. Concepts related to capacitance, inductance, and basic AC waveforms.	Prerequisites: None. TLT101 suggested but not required for students with no prior telecommunications experience.	L+L 4.0 6.0 6.0
TLT116	Telecommunications for Electronics II	Alternating current electrical theory and Digital theory related to the field of Telecommunications. AC circuits analyzed using Ohms Laws, Kirchhoff's Laws and power formulas. Concepts related to capacitors, inductors, and transformers. Telecom filter types: low pass, high pass, bandpass, and decibel loss. Telecommunications electronics concepts related to oscillators, rectifiers, filters, amplifiers, and modulators	Prerequisites: A grade of C or better in TLT115 or permission of Program Director.	L+L 3.0 5.0 5.0
TLT118	Copper-Based Cabling	Explains copper-based twisted-pair technology of the telecommunications industry and services provided. Information and techniques required to install and maintain telephone/data systems. Safety procedures, proper tool usage, connectorization, installation techniques, meter usage, trouble-shooting techniques. codes, standards, and regulations related to residential cabling	Prerequisites: None.	L+L 3.0 5.0 5.0
TLT140	Telecommunications Technician Computer Usage	Telecommunication industry customer microcomputer information. Emphasis on the commands, hardware, and software necessary for computer unit operation. Also covers procedures for navigating various operating systems	Prerequisites: None.	L+L 1.0 2.0 2.0

TLT141	Telecommunications Computer Operations	Telecommunications computer operation principles. Covers online training resource utilization, computer log-on procedures, and computer shortcut creation. Also includes specific computer software performance information	Prerequisites: None.	LEC 1.0 1.0 1.0
TLT142	Drop Connections	Technical concepts for drop connections. Includes passive and active devices as well as use of traps and filters. Also covers electronics hook up and troubleshooting procedures	Prerequisites: None.	LEC 1.0 1.0 1.0
TLT143	Digital Video Systems	Customer cable digital video signal reception establishment procedures. Covers system feature information, signal fault identification, and system and end-use equipment troubleshooting procedures. Also includes customer education information	Prerequisites: None.	L+L 2.0 3.0 3.0
TLT144	Drop Planning and Maintenance	Procedures for the planning and installation of Community Antenna Television (CATV) service to a customer address. Emphasis on drop connection location, configuration, and hardware component selection. Covers internal cable routing considerations and grounding, splitting, and directional tap/coupler component information. Also includes basic CATV system operation information and electronic hook-up procedures	Prerequisites: None.	L+L 2.0 3.0 3.0
TLT147	Residential Cable Modem Installation	Residential cable modem installation and maintenance practices. Emphasis on coaxial cable modem installation and troubleshooting procedures for various operating systems. Covers installation tool usage and feature description information	Prerequisites: None.	L+L 3.0 4.0 4.0

TLT148	End Use Equipment Connection	Procedures for explaining the connection of end use entertainment system equipment to telecommunications customers. Emphasis on service call complexity determination, video recorder connection procedure explanation, and universal remote control programming	Prerequisites: None.	L+L 3.0 4.0 4.0
TLT149	Digital Phone Network Installation	Telephone network installation procedures. Emphasis on multi dwelling unit, multiple broadband applications, and residential telephone networks. Covers component connection	Prerequisites: None.	L+L 2.0 3.0 3.0
TLT150	Digital Telephone Technician	Digital phone system service restoration concerns. Emphasis on the resolution of technical phone service problems. Covers problem identification, documentation, and resolution strategies. Includes customer service and trouble call scheduling concerns	Prerequisites: None.	LEC 3.0 3.0 3.0
TLT152	Telecommunications Product Knowledge	Telecommunications industry product and service information. Emphasis on video, Internet connection, and telephone services. Covers the advantages and disadvantages of telecommunications product types and the various features associated with each service.	Prerequisites: None.	LEC 2.0 2.0 2.0
TLT153	Digital Telecommunications Troubleshooting	Procedures for digital telecommunications representatives to perform phone based troubleshooting with customers. Emphasis on the identification and correction of digital telecommunications service reception issues. Covers customer and system equipment troubleshooting processes, documentation requirements, and repair scheduling procedures	Prerequisites: None.	LEC 3.0 3.0 3.0

TLT154	Technical Support Representative Foundations	Foundations of services, products, and regulations in the communications industry. Includes customer database research techniques as well as troubleshooting and billing procedures.	Prerequisites: None.	LEC 2.0 2.0 2.0
TLT155	Technical Support Representative Telephony	Practical application of digital telephony account services. Includes account research and creation of work orders in addition to access and navigation of troubleshooting databases. Also covers procedures for managing billing accounts and services.	Prerequisites: None.	L+L 2.0 3.0 3.0
TLT156	Introduction to Broadband Networks	Overview of broadband networks. Includes topography of broadband networks and transmissions systems. Also covers coaxial cable, broadband network equipment, network prints and signal leakage	Prerequisites: None.	LEC 2.0 2.0 2.0
TLT157	Broadband Sweep and Conditioning	Introduction to the basics of broadband network sweep and plant conditioning. Includes overview of noise, distortions, system powering and setup as well as powering problems	Prerequisites: None.	LEC 3.0 3.0 3.0
TLT158	Broadband Network Technical Concerns	Principles associated with broadband network transmission. Emphasis on basic network operation foundations. Covers electromagnetic spectrum usage, network component identification, cable operation verification, and signal transmission. Includes unity gain and tilt information, as well as Ohm's and Joule's Wheel Usage	Prerequisites: None.	L+L 2.0 3.0 3.0

TLT159	Broadband Network Technical Operations	Broadband network operation considerations. Emphasis on signal transmission problem identification and correction. Covers normal system operation parameter identification, distortion identification, and active and passive device operation information. Includes power supply and network print interpretation information	Prerequisites: None.	L+L 3.0 4.0 4.0
TLT160	Video Technical Training	Analog and digital video technical training procedures. Includes cabling options and types of digital video equipment, as well as products and services. Also covers procedures for completing customer video orders in the Integrated Communications Operations Management System (ICOMS). Troubleshooting procedures, tools, and video flows also included.	Prerequisites: None.	L+L 2.0 3.0 3.0
TLT161	Video Technical Training Lab	Practical application of analog and digital video technical training procedures. Covers procedures for completing customer video orders in the Integrated Communications Operations Management System (ICOMS)	Prerequisites: None.	LAB 1.0 2.0 2.0
TLT162	High Speed Internet/Networking	High speed internet installation and networking. Includes features and services of high speed internet as well as procedures for installation. Also covers home network installation and configuration	Prerequisites: None.	L+L 3.0 4.0 4.0
TLT163	High Speed Internet Technical Training	Procedures for presenting high speed internet products and services. Includes service tiers as well as network facilities and responsibilities. Also covers navigation of operating systems and troubleshooting common problems and procedures.	Prerequisites: None.	L+L 2.0 4.0 4.0

TLT164	High Speed Internet Technical Training Lab	Practical application of high speed internet technical training procedures. Covers procedures for completing customer orders in the Integrated Communications Operations Management System (ICOMS) and various industry databases	Prerequisites: None.	LAB 1.0 2.0 2.0
TLT165	Technical Support Representative Telephony Lab	Digital telephony account services. Includes use of the Integrated Communications Operations Management System (ICOMS) and industry databases to complete account services	Prerequisites: None.	LAB 1.0 2.0 2.0
TLT198AC	Telecommunications Work Experience	Participation in a work experience, on-the-job training, and exploring career opportunities in the field of telecommunications. Relates student's education to the real work world experience in telecommunications. Resume writing and interviewing skills	Prerequisites: Permission of Program Director.	L+L 3.0 3.0 3.0
TLT203	Data Telecommunications	Overview of network systems: architecture of each network, transmission modes, functions, uses, and protocols. Synchronous and asynchronous data systems will be described and compared. Current concepts, technologies, and equipment in local and wide area networking are evaluated	Prerequisites: A grade of C or better in TLT100 or TLT101 or permission of Program Director.	LEC 3.0 3.0 3.0
TLT204	Telephony	Overview of voice telecommunications systems that include both central office based and premised based platforms. Switching and transmission telecommunications concepts include numbering plans, powering, types of switches, call processing, signaling systems, traffic engineering. Topics include PBXs, and peripheral equipment, T1 trunk lines, and voIP (Voice over Internet Protocol) basics. Set-up and basic troubleshooting of PBX systems: programming phones and voice mail.	Prerequisites: None. TLT101 suggested but not required for students with no prior telecommunications experience.	L+L 3.0 3.0 3.0

TLT205	Cable Telecommunications II	Overview of voice telecommunications systems that include both central office based and premised based platforms. Switching and transmission telecommunications concepts include numbering plans, powering, types of switches, call processing, signaling systems, traffic engineering. Topics include PBXs, and peripheral equipment. Set-up and basic trouble-shooting of PBX systems: punch down block wiring, programming phones and voice mail.	Prerequisites: A grade of C or better in TLT101, TLT105 and TLT115 or permission of Program Director.	L+L 3.0 3.0 3.0
TLT206	Fiber Optics	Introduces photonics, fiber optic theory, and the fundamentals of fiber optic networks. Techniques to connect, splice, and test single-mode and multi-mode fiber cables. Includes fiber optic system components, wave guide transmission, lasers, electro-optics, and fiber optic sensors.	Prerequisites: None. TLT101 suggested but not required for students with no prior telecommunications experience.	L+L 3.0 4.0 4.0
TLT207	Wireless Telecommunications	Introduces wireless telecommunications systems related to present day wireless broadband systems, third generation systems, satellite personal communications systems, wireless LANs, blue tooth technology, and fixed wireless broadband systems. Additional concepts related to RF/wireless systems, operational parameters, spectrum, modulation, and multiplexing techniques.	Prerequisites: A grade of C or better in TLT101 or permission of Program Director. CIS190 suggested but not required.	L+L 3.0 3.0 3.0
TLT210	Convergence Emerging Technology	Explores business issues and emerging technologies in telecommunications. Topics reflect the rapid changes in the field of telecommunications that relate to new technologies, FCC regulations, and business/government issues. Addresses fundamental concepts, standards, and practices that combine telephony and data networks into convergence networks.	Prerequisites: A grade of C or better in TLT204 and (CIS190 or TLT203) or permission of Program Director.	LEC 3.0 3.0 3.0

TLT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
TLT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
TLT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
TQM101	Quality Customer Service	Examines the nature of quality customer service and the attitudes, knowledge, and skill needed to work effectively in a quality customer service environment. Foundation skills for quality customer services are taught, applied, and practiced	Prerequisites: None.	LEC 3.0 3.0 3.0



TQM101CA	Customer Service Skills	Emphasis on personal and practical skills needed to enhance customer service.	Prerequisites: None.	LEC 1.0 1.0 1.0
TQM105	Writing For Quality Results	Theory and practice of writing business correspondence in a quality-oriented organization. Includes the orientation of the writer to the internal/external customer's needs and writing in positive, negative and persuasive settings.	Prerequisites: Appropriate English placement test score in ENG101 or a grade of C or better in ENG091. OAS108 and TQM101 are recommended.	LEC 2.0 2.0 2.0
TQM200	Leadership for Front-Line Employees	Methods of traditional management concepts and their application to a quality oriented environment for the front-line employee. Covers planning, goal-setting, problem-solving, motivation, time management, adaptability, flexibility and dependability in a quality setting.	Prerequisites: None. TQM101 is recommended.	LEC 2.0 2.0 2.0
TQM220	Leadership and Empowerment Strategies	Methods for facilitating teams and empowering employees which effectively enable all employees to act upon a shared vision.	Prerequisites: None.	LEC 2.0 2.0 2.0
TQM230	Teamwork Dynamics	Theory and practice of how team members and team leaders use listening, negotiating and interpersonal skills for the enhancement of team process. Included are concepts of team development and team problem-solving techniques.	Prerequisites: None.	LEC 2.0 2.0 2.0
TQM235	Motivation, Evaluation, and Recognition Systems	Presents methods for benchmarking, assessing team performance, linking recognition to team performance, and valuing victories and mistakes with all personnel.	Prerequisites: None.	LEC 2.0 2.0 2.0
TQM240	Project Management in Quality Organizations	Presents methods for quality organizations in how to plan and schedule a project in use of Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT) techniques and software to monitor and control projects	Prerequisites: None.	LEC 3.0 3.0 3.0

TRS100	Survey of Translation and Interpretation	Professional, sociolinguistic, and cognitive aspects of translation and interpretation. Includes social justice goals and language policy for interpretation and translation, role of translators and interpreters, consecutive interpretation, role of norms in legal translation, conservation of meaning, register, and style, meaning of translation, health care interpretation and translation, business and technical translation	Prerequisites: None.	LEC 4.0 4.0 4.0
TRS102	Translation of English to Spanish	Analysis of the Spanish language with an emphasis on cross-language similarities and differences. Includes the structure of Spanish, cultural and stylistic components, semantics, dialectal differences and lexical obstacles. Widening of lexicon across specific lexical fields and wider shared underpinnings of Greco-Latin etymologies. Brief introduction to historical development of the Spanish language with specific focus on cognates and false cognates.	Prerequisites: A grade of C or better in (SPA202 or SPA204) and permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0
TRS103	Translation of Spanish to English	Analysis of the English language with an emphasis on cross-language similarities and differences. Course includes the structure of English, cultural and stylistic components, semantics, Standard English conventions, and metaphorical and idiomatic English. Introduction to translation of basic documents from Spanish to English.	Prerequisites: A grade of C or better in (ENG102 or ENG108) and (SPA202 or SPA204) and permission of Department or Division. Completion of prerequisites within the last three years is required.	LEC 3.0 3.0 3.0

TTD101	Truck Trailer Driving I	General program overview. Orientation to trucking profession, including history, governing agencies, and regulations. Professionalism and the role of commercial driver. Introduction to tractor-trailers, including identification and operation of various parts and controls. Introduction to hours-of-service regulations. Discussion of truck stops/fueling stations. Analysis of the Federal Motor Carrier Safety Regulations. Introduction to procedures for coupling, uncoupling, and fifth wheel and trailer tandem slides. Preparation for the Arizona State License and Department of Transportation's certification examinations.	Must meet pre-qualifying requirements of the industry by providing a social security card, valid AZ driver's license, 5-yr motor vehicle report devoid of excessive infractions and passing Department of Transporting physical exam and drug screen.	LEC 3.0 3.0 3.0
TTD102	Truck Trailer Driving II	Continued study of activities performed by professional drivers, with an emphasis on the safety of the driver, vehicle, cargo, and other road users. Training and certification in first aid and CPR skills. In-depth preparation for hazardous materials, doubles/triples, and tanker endorsements. Introduction to the pre-trip inspection. Discussion of tire chain use and demonstrated installation. Development of knowledge and skills in the areas of cargo documentation and trip planning. Discussion of issues pertaining to life on the road, communications, and personal resources. Includes information gathering and guidance for the job search.	Prerequisites: A grade of C or better in TTD101.	LEC 3.0 3.0 3.0

TTD103	Truck Trailer Driving III	Study and application of practical skills and knowledge necessary for safe, efficient operation. Vehicle handling skills and fuel-efficient operating practices, including backing procedures, coupling and uncoupling, visual search, communications, speed, and space management. Techniques for operation in mountain driving conditions. Includes hazard recognition, emergency maneuvers, and control and recovery. Includes function and operation of all key vehicle systems, diagnosing and reporting of malfunctions to service personnel.	Prerequisites: A grade of C or better in TTD102.	L+L 4.0 6.0 6.0
TTD104	Truck Trailer Driving Practicum	On-the-job practicum providing experience and training to develop advanced competencies in handling a tractor-trailer. Includes accurate reading and evaluation of vehicle systems and controls, advanced proficiency of control maneuvers, gear-shifting procedures, backing and parking, coupling and uncoupling, and driver communication principles. Also includes safe and proper search, speed, and space management; emergency maneuvers; night driving; hazardous weather driving; other hazardous situations, i.e., mountain driving, construction zones, city driving. Provides over-the-road administrative and non-driving experience. Covers non-driving tasks required of the driver. Includes planning trips, conducting vehicle inspections, preventive maintenance and servicing, handling and documenting cargo, record keeping, emergency procedures, customer service, and professionalism.	Prerequisites: A grade of C or better in TTD103.	LAB 6.0 24.0 0.0

UAS100	sUAS Batteries and Electronics	Small Unmanned Aircraft Systems (sUAS) basic electronics and circuits, communications, information display systems, transmitter and receiver fundamentals, flight controller installation and tuning, lithium polymer battery basics, radio telemetry, basic electrical troubleshooting and repair techniques.	Prerequisites: Appropriate placement test score in Reading, Writing and Math, or [eligibility in ENG101, (RDG100 or RDG100LL), MAT120, MAT121 and MAT122].	LEC 5.0 5.0 5.0
UAS101	Introduction to Unmanned Aircraft Systems Operation	Introduction to Unmanned Aircraft Systems (UAS) history, flight, avionics, sensors, communication systems, and an introduction to data analysis and applications, such as first responders, Geographic Information Systems, and Precision Agriculture.	Prerequisites: None.	LEC 3.0 3.0 3.0
UAS107	Unmanned Aircraft Systems Operator Certification	Develop knowledge and skills needed to manage and operate small Unmanned Aircraft Systems (sUAS). Includes Federal Aviation Regulations, radio communications, weather, airspace and airport authorization criteria, loading and performance, aeronautical decision making, sUAS flight operations, and maintenance. Operational skills acquired through both classroom and hands-on flight activities.	Prerequisites: None.	LEC 3.0 3.0 3.0
UAS205	sUAS Instruments and Autopilot Programming and Uses	Small unmanned aircraft systems (sUAS) proper operation of ground control stations with remote aircraft, troubleshooting radio link issues, changing parameters, setting up waypoints, flying on autopilot only.	Prerequisites: A grade of C or better in UAS100, UAS101, and UAS107. Corequisites: UAS206.	LEC 3.0 3.0 3.0
UAS206	sUAS Instrument and Autopilot Flight Lab	Students will use their advanced skills to manipulate a ground control station in the practical operation of Small Unmanned Aircraft Systems (sUAS) in a controlled, but realistic environment.	Prerequisites: A grade of C or better in UAS100, UAS101, and UAS107. Corequisites: UAS205.	LAB 2.0 2.0 2.0

UAS207	sUAS Dynamics and Design	Design, configuration, and concepts of Small Unmanned Aircraft Systems (sUAS). Platform types including multi-rotors, single rotor, and fixed wing aircraft.	Prerequisites: A grade of C or better in UAS205 and UAS206. Corequisites: UAS208.	LEC 5.0 5.0 5.0
UAS208	sUAS Dynamics and Design Lab	Students will assemble, program, preflight, and fly a Small Unmanned Aircraft System (sUAS) manufacturing equipment.	Prerequisites: A grade of C or better in UAS205 and UAS206. Corequisites: UAS207.	LAB 2.0 2.0 2.0
UAS211	sUAS Ground Control Stations, Telemetry, and Communications	Small Unmanned Aircraft Systems (sUAS) proper set-up, operation, and basic troubleshooting of many different Ground Control Stations used in the industry. Set-up, use, and configuration of different radio telemetry units. Proper use and procedures of communications with Air Traffic Control. Proper use of applications for use in Air Traffic Management.	Prerequisites: A grade of C or better in UAS207 and UAS208.	L+L 3.0 4.0 4.0
UAS212	sUAS Maintenance Lab	Proper inspection, troubleshooting, and repair techniques for Small Unmanned Aircraft Systems (sUAS).	Prerequisites: A grade of C or better in UAS207 and UAS208.	LAB 2.0 2.0 2.0
UAS215	sUAS Commercial Flight Training	Proper pre-flight and operation techniques used in a Small Unmanned Aircraft (sUAS) Commercial Environment. Gathering digital information from an inspection or surveillance flight, then demonstrate post-production skills and techniques for a useable customer product.	Prerequisites: A grade of C or better in UAS207 and UAS208.	L+L 3.0 6.0 6.0
UCS101	Introduction to Billing	An introduction to basic billing procedures in the public utility industry. Includes computer familiarization, coordinates system, billing cycle, payment plans, and components of the bill	Prerequisites: None.	LEC 3.0 3.0 3.0
UCS104	Public Utility Customer Service	Overview of customer service concepts. End-result benefits, customer satisfaction system, and problem solving emphasized. Behavior styles also covered	Prerequisites: None.	LEC 1.0 1.0 1.0

UCS105	Introduction to Public Utility	Introduction to public utility customer service operations. Emphasis on public utility workstation components and usage procedures. Covers customer service, documentation, and confidentiality policies, as well as service area geography.	Prerequisites: None.	LEC 2.0 2.0 2.0
UCS108	Account Services for Public Utilities	Overview of procedures for accessing and maintaining customer accounts. Includes the billing cycle, rates and payment options as well as various types of service orders	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
UCS110	Meter and Trouble Orders	Fundamentals of meters and their functions. Instruction on providing meterchecks, handling trouble calls and determining and processing corrective action.	Prerequisites: None.	LEC 2.0 2.0 2.0
UCS115	Introduction to Water Customer Services	Introduction to water customer account services. Includes the irrigation process, accounts, and schedules. Also covers delivery systems, controls, and use of a mapping system in addition to water rights and typical irrigation problems.	Prerequisites: None.	LEC 2.0 2.0 2.0
UCS116	Water Services Accounts I	Water services procedures and restrictions for opening, combining, and updating accounts as well as responding to billing and payment inquiries and opening accounts. Also covers Supplemental Supply Program (SSP) water and various user accounts in addition to company role and responsibilities.	Prerequisites: A grade of C or better in UCS115.	LEC 2.0 2.0 2.0
UCS117	Water Services Accounts II	Water services rules and restrictions for handling property sales, special requests, and order revisions in addition to typical irrigation problems. Also covers procedures for handling private system controls, flood calls, and water theft issues as well as facility notices.	Prerequisites: A grade of C or better in UCS116.	LEC 2.0 2.0 2.0

UCS118	Water Customer Services Procedures I	Practical application of water customer account services. Includes procedures for creating, accessing, and updating accounts as well as completing and documenting water orders. Also covers use of the mapping system and procedures for handling typical irrigation calls.	Prerequisites: A grade of C or better in UCS115.	L+L 2.0 4.0 4.0
UCS119	Water Customer Services Procedures II	Procedures for completing billing and payment account procedures. Covers refunds, overdraft accounts, and procedures for handling water theft. Also covers special requests, flood calls, and townsite issues in addition to Supplemental Supply Program (SSP) requests.	Prerequisites: A grade of C or better in UCS118.	L+L 2.0 4.0 4.0
UCS120	Payments, Credits and Rates	Examination of procedures to perform payment, deposit and credit operations. Includes various connect orders and rate calculations.	Prerequisites: None.	LEC 3.0 3.0 3.0
UCS122	Public Utility Orders I	Procedures for processing public utility customer requests. Emphasis on determining billing options, service plans, and payment procedures. Covers new account establishment and field activity order processing. Also includes meter exchange and rate change.	Prerequisites: A grade of C or better in UCS105 or Corequisites: UCS105.	LEC 3.0 3.0 3.0
UCS124	Public Utility Orders II	Practical application in processing public utility customer orders. Emphasis on using workstation and software applications. Covers meters, shut-off, as well as, the creation of new accounts. Also covers order modification, payment options, service plan and deposit requirements, and meter reading data.	Prerequisites: A grade of C or better in UCS122 or Corequisites: UCS122.	L+L 3.0 4.0 4.0



UCS126	Public Utility Service Practices	Application of public utility customer service practices. Covers account and service plan enrollment, modifications, and cancellations. Includes account handling exceptions and service area geography. Computer usage emphasized.	Prerequisites: A grade of C or better in UCS124 or Corequisites: UCS124.	L+L 2.0 3.0 3.0
UCS128	Public Utility Processing	Public utility service processes. Includes procedures for processing multiple service orders, turn-on orders, miscellaneous orders, trouble and outages and electrical safety hazard orders. Customer service and professional interpersonal communications emphasized.	Prerequisites: A grade of C or better in UCS126 or Corequisites: UCS126.	LEC 3.0 3.0 3.0
UCS130	Service Orders I	Fundamentals of processing service orders. Emphasis on customer service, making determinations of services required and placing appropriate orders	Prerequisites: None.	LEC 3.0 3.0 3.0
UCS134	Advanced Public Utility Processing	Procedures for practical application in processing public utility customer requests. Includes advanced billing inquiries, collection, and documentation procedures, as well as energy usage analysis and consumption rates. Meter reads, billing adjustments, and rebilling miscellaneous charges also covered.	Prerequisites: A grade of C or better in UCS128 or Corequisites: UCS128.	L+L 3.0 4.0 4.0
UCS135	Service Orders II	Further examination of the processing of service orders. Emphasis on customer account data, account status, third party billings and placing appropriate orders	Prerequisites: A grade of C or better in UCS130.	LEC 2.0 2.0 2.0
UCS140	Service Order Procedures	Practical application of service order processing. Includes meter and trouble orders, requests for service, billings and rates, as well as account turn-offs and reconnects.	Prerequisites: A grade of C or better in UCS135.	L+L 2.0 4.0 4.0

UCS150	Metering Technician Safety	Electrical and hand tool usage safety for metering technicians. Emphasis on safety requirements associated with working with electricity and electrical equipment. Covers grounding, faults, electrical subsystems, and hand tool maintenance. Includes basic and electrical operation, of specific hand tools, Lockout/Tagout, and safety mandate compliance information	Prerequisites: None.	LEC 2.0 2.0 2.0
UCS152	Mathematics for Metering Technicians	Overview of the algebraic mathematical principles required for successful performance as an Electrical Metering Technician. Emphasis on algebraic calculation, number translation, ratio, proportion, and percentage concepts. Covers basic mathematical operations, number reduction, algebraic operating system order, and scientific calculator usage	Prerequisites: None.	LEC 2.0 2.0 2.0
UCS154	Power System Fundamentals	Principles of power generation, transmission, and distribution for metering technicians. Emphasis on the physics associated with electric power and on the properties of alternating current. Covers generator paralleling, transformers, and power capacity issues	Prerequisites: None.	LEC 1.0 1.0 1.0
UCS156	Watt-hour Metering and Single Phase Systems	Principles of watt-hour metering and single phase system installation and maintenance. Emphasis on the principle components of various metering schemes and procedures for their connection to the service. Covers National Electrical Code requirements, meter socket construction, meter mounts, and service checks	Prerequisites: None.	L+L 2.0 4.0 4.0
UCS160	Metering Technician Lab	Practical experience for metering technicians. Covers safety equipment use, meter types and sockets, wiring and coding. Installation and testing of meters emphasized	Prerequisites: None.	L+L 2.0 3.0 3.0

UCS162	Advanced Metering Technician	Mathematical and meter knowledge for advanced metering technicians. Includes equations, geometric shapes, coordinates, and complex numbers. Covers meter testing, function, and operation of various types of meters	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
UCS170	Introduction to Distribution Design	Introduction to distribution design. Includes the power distribution process, generation station types, and characteristics of circuits and circuit breakers. Also covers the goals, structure, and responsibilities of the Distribution Operations Center (DOC), Transmission and Distribution Services (T&DS), and Customer Construction Services (CCS).	Prerequisites: None.	LEC 2.0 2.0 2.0
UCS171	Geographic Information System Foundations	Introduction to Geographic Information Systems (GIS) for distribution design technicians. Includes the purpose, organization, and function of distribution design technology as well as procedures for accessing and navigating the system. Also covers workflow, data loading, and work points in addition to procedures for creating and managing designs in a Distribution Design Automation (DDA) program.	Prerequisites: None.	LEC 3.0 3.0 3.0
UCS172	Distribution Design Policy	Overview of distribution design policy. Includes required information and procedures for the permit process, in addition to accessing applicable policies and land reference information. Also covers the easement process, land work requests, and land agent responsibilities.	Prerequisites: None.	LEC 2.0 2.0 2.0

UCS173	Distribution Design Essentials	Essential skills for the distribution design technician. Includes use and interpretation of maps and coordinates in addition to basic electrical equipment used in the distribution of electricity. Also covers job prints, drawings, and graphic rules for the design process.	Prerequisites: None.	LEC 3.0 3.0 3.0
UCS174	Distribution Design Equipment and Operations	Overview of distribution design equipment and operations in the field. Includes types and applicability of various types of equipment and construction methods and the use of Asset Management Project (AMP) to track and manage design and construction activities. Also covers the Distribution Operations Center (DOC) job types and interactions, as well as the responsibilities of the Geographic Information System (GIS) technician.	Prerequisites: None.	LEC 3.0 3.0 3.0
UCS175	Distribution Design Drawing	Overview of distribution design drawing standards. Includes the purpose and characteristics of drawing standards, as well as procedures for accessing and applying commonly used standards and rules. Practical application of standards for creating service installation, dusk to dawn, and switch replacement jobs in addition to completion of Field Installation Records (FIR).	Prerequisites: None.	L+L 2.0 3.0 3.0
UCS176	Applied Distribution Design Drawing	Practical application of distribution design drawing standards. Includes job descriptions, design considerations, and steps in completing distribution designs for capacitor banks, single family homes, simple commercial, and multiple streetlights drawings as well as subdivision model homes.	Prerequisites: None.	L+L 2.0 3.0 3.0
UTP110	Hand and Power Tools for Linemen	Use, maintenance, and safety procedures for common hand and power tools used in the electric power industry.	Prerequisites: None.	LEC 1.0 1.0 1.0

UTP111	Line Work Equipment and Safety	Overview of the line work industry including its history, technological developments, and current practices. Covers an introduction to industry equipment and tools with a focus on safety practices and procedures. Inspection and maintenance of equipment and tools used in pole climbing and cover-up procedures. Emphasis on safety operations.	Prerequisites: None.	LEC 4.0 4.0 4.0
UTP112	Line Construction	Introduction to line construction equipment and procedures. Includes personal protective equipment, climbing equipment, and basic line materials. Also covers procedures for handling wood poles, de-energized lines, and one-man pole-top rescues, in addition to equipment and procedures for grounding and creating a safe zone.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP113	Rigging Fundamentals	Fundamentals of rigging for linemen. Includes safe use of rigging components including ropes, knots, handlines, and block and tackle. Covers rigging calculations and approaches to basic rigging tasks, in addition to hazards.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP114	Line Construction Procedures	Line construction procedures including pole change out, horizontal line construction, and taking lines out of service. Covers distribution line symbols, compatible units, and second point of contact, in addition to calculating pulling tension and procedures for stringing overhead service and approaching hot circuits.	Prerequisites: A grade of C or better in UTP112.	LEC 3.0 3.0 3.0

UTP115	Underground Line Construction	Introduction to underground line construction. Includes a comparison of duct and vault underground systems. Also covers Blue Stake laws and markings, procedures for pulling and maintaining underground cable, and safety considerations for trenching and excavating.	Prerequisites: None.	LEC 2.0 2.0 2.0
UTP150	Introduction to Transformer Theory	Introduction to transformers and transformer theory. Covers the basic structure, components and applications of single-phase and three phase transformers. Includes interpretation of transformer nameplates, in addition to characteristics and functions of distribution transformers.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP151	Transformer Theory Design and Function	Comparison of function of various types of transformers. Includes design of single-phase and three-phase transformers, as well as safety procedures and precautions for energizing transformers. Also covers wiring transformers in parallel and three-phase connection diagrams.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP152	Transformer Diagramming and Calculations	Diagramming and calculations in transformer theory. Includes use of the Pythagorean Theorem and sine and cosine waves and functions to complete calculations. Also covers secondary and primary voltage, voltage ratio and loss calculations, in addition to blueprint reading.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP155	Introduction to Hot Stick	Introduction to hot stick terminology, tools, and procedures. Includes procedures for cleaning, storage, and handling in addition to inspection and testing. Also covers tie-wires, preform ties, hold tags, and live line tailboard development.	Prerequisites: None.	LEC 3.0 3.0 3.0

UTP156	Hot Stick Theory and Calculations	Rigging theory and calculations for hot stick application, including Working Load Limit (WLL). Also covers slings, personal protective grounding, and protective cover, in addition to energized conductors and lines.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP157	Hot Stick Work Site and Equipment	Hot stick work site, materials, and equipment procedures. Covers fault location, meter load, tower erection, and phasing sequences in addition to procedures for managing safety in confined spaces. Also includes cable preparation and pulling procedures as well as equipment and site operations and safety.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP210	Personal Protective Grounding	Considerations and procedures for personal protective grounding with a review of basic electrical circuits. Covers function, sizing, and installation of protective grounding sets on trucks, underground distribution systems, and construction projects. Also covers resistance testing, equipotential zones, lightning protection, and live line tools.	Prerequisites: None.	LEC 2.0 2.0 2.0
UTP211	Overhead Distribution Line Design	Introduction to overhead distribution line construction design. Includes overhead construction standards, distribution pole standards, and primary construction units as well as controls and installation standards for various types of capacitors. Also covers clearances, calculations, drawings, and design criteria for overhead distribution line design.	Prerequisites: None.	LEC 3.0 3.0 3.0

UTP212	Underground Distribution Line Design	Introduction to underground distribution line construction design. Includes construction assembly units, capacitor banks, switching, and fusing as well as applications for conduit and feeder riser compatible units. Also covers clearances, calculations, drawings, and design criteria for underground distribution line design.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP215	Emerging Technologies	Overview of emerging technologies in electrical energy production. Includes applications, limitations, and advantages of various types of alternative energy. Also covers characteristics of and advantages to the use of fiber optics. Design and function of Extra High Voltage (EHV) lines also examined.	Prerequisites: None.	LEC 2.0 2.0 2.0
UTP216	Transformer Operations and Troubleshooting	Advanced transformer operation and troubleshooting procedures. Includes characteristics of three-phase systems, distribution capacitors, and fusing. Covers transformer calculation including voltage regulation, fault current, and load. Procedures for isolating and testing transformers and system change-out also covered.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP217	Electrical Substations	A comparison of operation and design of various types of substations. Includes construction planning, design, diagrams, and blueprints, in addition to hazards and safety issues. Also covers substation stresses, superstructures, and equipment function and maintenance.	Prerequisites: None.	LEC 3.0 3.0 3.0
UTP250	Maps and Schematics for Linemen	Components, coordinates, and symbols for maps and schematics used by linemen. Also includes procedures for access and navigation of mobile Geographic Information Systems (GIS).	Prerequisites: None.	LEC 1.0 1.0 1.0



UTP251	Metering Theory for Linemen	Concepts of energy measurement and metering theory for linemen. Includes the power triangle and various metering types, ratings, and strategies for troubleshooting metering problems.	Prerequisites: None.	LEC 2.0 2.0 2.0
UTP255	Power Distribution Operations	Transmission and Generation Operations (TGO), Distribution Operations Center (DOC), and Power Distribution Operations (PDO) organization and responsibilities.	Prerequisites: None.	LEC 2.0 2.0 2.0
UTP258	Applied Line Topics	Applied line topics for linemen. Includes rigging calculations and derating factors as well as diagramming of three-phase vectors and wiring. Also covers procedures, documentation, and restrictions for receiving, modifying, and releasing clearances.	Prerequisites: None.	L+L 3.0 4.0 4.0
VET101	Introduction to Veterinary Technology	Introduces the role of the veterinary paraprofessional to the veterinary science industry. Addresses professional development, including ethics, professionalism, and legal implications of veterinary practice. Students will be introduced to animal husbandry and nutrition, animal behavior, species and breed identification, the human-animal bond, biosecurity, equine medicine, livestock medicine, companion animal medicine, and lab animal medicine.	Prerequisites: None. Corequisites: VET101LL.	LEC 3.0 3.0 3.0
VET101LL	Animal Care Skills I Laboratory	Principles of daily animal husbandry, socialization, enrichment, and clinical care of animals housed in campus facilities. Introductory veterinary technology students work on building teamwork, communication and veterinary technical skills encountered in the daily operations of a multi-species veterinary facility.	Prerequisites: None. Corequisites: VET101.	LAB 2.0 2.0 0.0

VET103	Veterinary Assistant I	This is a lecture/laboratory course where students will learn hands-on skills needed to perform the duties of a veterinary assistant. The course will introduce the basic veterinary assistant skills needed to assist veterinary professionals in the quality care of animals. Includes basic introduction to anatomy and physiology of domestic animals, front office skills, communication and client relations, animal restraint, nursing, vaccinations and other basic assisting skills.	Prerequisites: A grade of C or better in VET101. High school biology strongly recommended.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0
VET104	Veterinary Assistant II	This is a lecture/laboratory course where students will learn hands on skills needed to perform the duties of a veterinary assistant. The course will build foundation skills for veterinary clinical care for the veterinary assistant. This course includes foundations in pharmacy and pharmacology, surgical preparation and assisting, the veterinary assistant's role in collection of laboratory samples, and diagnostic imaging.	Prerequisites: A grade of C or better in VET101 and VET103. High school biology strongly recommended.	LEC 3.0 2.0 2.0 LAB 0.0 3.0 3.0

VET109	Veterinary Assistant Internship	<p>This course provides Veterinary Assistant program students with off-campus clinical experience in a small animal general veterinary practice. There is opportunity for practical application and development of knowledge, skills, and abilities acquired in program coursework at a veterinary assistant level. Students have exposure to practice philosophies, methodologies, and real-life situations requiring critical thinking and decision-making abilities. The internship includes instruction and evaluation by veterinarians or veterinary technicians guided by the National Association of Veterinary Technicians in America Veterinary Assistant Student Essential and Recommended Skills list.</p>	<p>Prerequisites: A grade of C or better in VET101, VET103, and VET104.</p>	<p>LAB 1.0 1.0 0.0</p>
VET112	Animal Nursing I	<p>Training in and supervised performance of skills necessary in the husbandry and clinical care and treatment of animals. Occupational hazards and safety in livestock, companion animal, and laboratory animal facilities. Introduction to medical terminology. Restraint and handling, feeding, and housing of a variety of animal species. Physical examination of various species of animals. Principles of sanitation, disinfection, sterilization, and aseptic technique. Principles and techniques of medication administration, fluid therapy, and vaccination. Familiarization with operation of various types of animal care equipment. Introduction to laboratory techniques. Professional ethics and the human-animal bond.</p>	<p>Prerequisites: A grade of C or better in VET101 and admission to the Veterinary Technology/Animal Health program or permission of Instructor.</p>	<p>LEC 2.0 2.0 2.0 LAB 0.0 3.0 3.0</p>

VET132	Veterinary Office Management and Client Communication	Principles and practice of veterinary office management for veterinary technology students. Client relations, receptionist skills, telephone techniques, interpersonal skills, and personnel management. Generation and maintenance of correspondence, medical records, legal forms, and hospital logs. Basic bookkeeping, accounting, and financial management principles. Marketing and public relations. Professional ethics and professionalism. Use of computers for data entry, patient record management and inventory control.	Prerequisites: A grade of C or better in VET101 or permission of Instructor.	LEC 3.0 3.0 3.0
VET140	Animal Care Skills II	Practical application of animal care skills and principles of animal care and management using techniques and knowledge learned in the veterinary technology classes. Students expand their animal care knowledge, skills and abilities to include skills needed to be successful in clinical internships.	Prerequisites: None. Corequisites: VET150 or VET151 and admission to the Veterinary Technology program.	LAB 2.0 2.0 0.0
VET150	Veterinary Anatomy and Physiology I	Comparative evaluation of the anatomy and physiological functions of various body systems of livestock, companion animals, and laboratory animals.	Prerequisites: A grade of C or better in (BIO181, CHM130, CHM130LL, CRE101, ENG102, MAT120, and VET101) and admission to the Veterinary Technology/Animal Health Program.	LEC 3.0 3.0 3.0
VET150LL	Veterinary Anatomy and Physiology Laboratory I	Laboratory experience in support of VET150. Includes dissection of preserved animal specimens.	Prerequisites: None. Corequisites: VET150.	LAB 1.0 3.0 3.0
VET151	Veterinary Anatomy and Physiology II	Focuses on unique anatomic structures and physiological processes which are clinically important in veterinary medicine. Anatomical and physiological bases of clinic procedures, animal disease processes, and veterinary treatments.	Prerequisites: A grade of C or better in VET150 or permission of Instructor.	LEC 3.0 3.0 3.0 LAB 0.0 3.0 3.0

VET151	Veterinary Anatomy and Physiology II	Focuses on unique anatomic structures and physiological processes which are clinically important in veterinary medicine. Anatomical and physiological bases of clinic procedures, animal disease processes, and veterinary treatments.	Prerequisites: A grade of C or better in VET150 or permission of Instructor.	LEC 3.0 3.0 3.0 LAB 0 3.0 3.0
VET200	Veterinary Clinical Pathology Methods	Fundamental studies of laboratory techniques and procedures involved in evaluating veterinary clinical samples. Includes hematology, urinalysis, hemostasis, blood biochemistry and enzymology, serology, cytology, and parasitology. The veterinary technician's role in sample collection, sample storage and handling, and performance of analytic procedures. Use of laboratory equipment, laboratory safety and management, and quality control.	Prerequisites: A grade of C or better in BIO205 or permission of Instructor. Corequisites: VET223.	LEC 3.0 3.0 3.0 LAB 0.0 3.0 3.0
VET201	Animal Care Skills III	Practical application of animal care skills and principles of animal care and management using techniques and knowledge learned in the veterinary technology classes. Students expand their animal care knowledge, skills and abilities to include skills needed to be successful in clinical internships.	Prerequisites: None. Corequisites: VET210 and VET240 and admission to the Veterinary Technology program.	LAB 2.0 2.0 0.0
VET210	Animal Nursing II	Instruction in and hands-on application of techniques of veterinary nursing care, patient assessment, equipment operation, diagnostic sample collection, and medical treatment. Physical examination, clinical nutrition, and reproductive management of the dog and cat. Operation of E.C.G. and anesthetic machine. Fluid therapy, wound therapy, and bandaging. Surgical instruments and packs. Common diagnostic and therapeutic procedures on animals.	Prerequisites: A grade of C or better in (VET112 and VET151) or permission of Instructor.	LEC 2.0 2.0 2.0 LAB 0.0 3.0 3.0

VET220	Veterinary Pharmacology for the Veterinary Technician	Actions and uses of pharmacological agents used in veterinary medicine; drug classifications, modes of action, indications and contraindications, routes of administration, and mechanisms of elimination. Dispensing and pharmacy management, and laws regulating controlled substances. Solving medical math problems and calculating drug doses.	Prerequisites: A grade of C or better in VET101 and VET151. Corequisites: VET223.	L+L 3.0 5.0 5.0
VET223	Animal Diseases	Study of common infectious, parasitic, metabolic, immunologic, and degenerative diseases of domestic animals. Infectious disease transmission, mechanisms of disease, the host-parasite relationship, and host responses to disease agents. Clinical signs and management of common diseases. Life cycles of common parasites. Principles of disease prevention, environmental management, vaccination, and zoonosis. Diagnostic techniques including gross and microscopic identification of common animal pathogens.	Prerequisites: A grade of C or better in VET151. BIO205 recommended.	L+L 3.0 5.0 5.0
VET230	Veterinary Radiology and Imaging for the Veterinary Technician	Veterinary and radiographic terminology, radiation and electrical protection, technical principles, radiographic equipment operation - manual and digital, and radiographic duties of the Veterinary Technician. Introduction to ultrasound, MRI, CAT scans, and other non-traditional imaging uses and techniques. Lab allows for practical application of theories and radiographic positioning as taught in lecture.	Prerequisites: A grade of C or better in (VET150 and VET150LL) or permission of Instructor.	LEC 3.0 3.0 3.0 LAB 0.0 3.0 3.0

VET235	Veterinary Technician Proficiency	Review of pertinent subject matter in preparation for the Arizona State Veterinary Technician Examination and the Veterinary Technician National Examination. Guided review and discussion of exam application process. Review of student's Veterinary Technology Student Essential and Recommended Skills to ensure completion for graduation as required by the American Veterinary Medical Association. May include field trips or guest lecturers.	Prerequisites: A grade of C or better in VET210, VET220, and VET223. Corequisites: VET240.	L+L 2.0 2.0 2.0
VET240	Veterinary Anesthesia, Surgery, and Emergency Nursing	Veterinary surgical nursing skills associated with aseptic technique and proper protocol in the surgery suite. Pre and post-op monitoring, record keeping, and client education skills. Procedures and techniques with intravenous and inhalation anesthetics, surgical asepsis, skin preparation, instrument sterilization techniques and monitoring veterinary patients for vital signs.	Prerequisites: A grade of C or better in VET210 and VET220.	LEC 3.0 3.0 3.0 LAB 0.0 4.0 4.0
VET250AA	Veterinary Technician Internship	Provides Veterinary Technology program students with off-campus clinical experience in a small animal general veterinary practice. Opportunity for practical application and development of knowledge, skills, and abilities acquired in program coursework. Exposure to practice philosophies, methodologies, and real-life situations requiring critical thinking and decision-making abilities. Includes instruction and evaluation by veterinarians or veterinary technicians guided by the American Veterinary Medical Association's Veterinary Technology Student Essential and Recommended Skills list.	Prerequisites: A grade of C or better in VET112, VET132, and VET151.	LAB 0.5 0.5 0.0

VET250AB	Veterinary Technician Internship	Provides Veterinary Technology program students with off-campus clinical experience in a large animal general veterinary practice. Opportunity for practical application and development of knowledge, skills, and abilities acquired in program coursework. Exposure to practice philosophies, methodologies, and real-life situations requiring critical thinking and decision-making abilities. Includes instruction and evaluation by veterinarians or veterinary technicians guided by the American Veterinary Medical Association's Veterinary Technology Student Essential and Recommended Skills list.	Prerequisites: A grade of C or better in VET250AA.	LAB 0.5 0.5 0.0
VET250AC	Veterinary Technician Internship	Provides Veterinary Technology program students with off-campus clinical experience in an emergency veterinary clinic and in a veterinary specialty practice. The internship hours will be split equally between the emergency clinic and the specialty practice. Specialty practices may include surgery, ophthalmology, internal medicine, dentistry, dermatology, radiology, exotics, zoo, research, and others. Opportunity for practical application and development of knowledge, skills, and abilities acquired in program coursework. Exposure to practice philosophies, methodologies, and real-life situations requiring critical thinking and decision-making abilities. Includes instruction and evaluation by veterinarians or veterinary technicians guided by the American Veterinary Medical Association's Veterinary Technology Student Essential and Recommended Skills list.	Prerequisites: A grade of C or better in VET250AB or permission of Instructor.	LAB 0.5 0.5 0.0



VET250AD	Veterinary Technician Internship	Continuing practical application and mastery of knowledge, skills, and abilities in the selected clinical setting. Exposure to practice philosophies, methodologies, and real-life situations requiring critical thinking and decision-making abilities. Includes instruction and evaluation by veterinarians or veterinary technicians guided by the American Veterinary Medical Association's Veterinary Technology Student Essential and Recommended Skills list.	Prerequisites: A grade of C or better in VET250AC or permission of Instructor.	LAB 0.5 0.5 0.0
VRT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
VRT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

VRT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
WAC101	Writing Across the Curriculum	Expressive, expository, and academic writing experiences to develop students' rhetoric and composition foundation. Experience planning and drafting multi-paragraph essays through a writing process with emphasis on essay and paragraph structure and the elements of sentence structure. Participation in writing workshop, group work, reading to support writing tasks, and writing from sources. A minimum of three multi-paragraph essays and a final reflection paper.	Prerequisites: None.	LEC 3.0 3.0 3.0
WED100	Personal Wellness	Overview of wellness and its relationship to personal health. Understanding of personal wellness through lifestyle assessments. Introduction to wellness and health-related topics including fitness, relationships, nutrition, self care, abusive behaviors, mind/body connection, and other current issues in health	Prerequisites: None.	L+L 2.0 2.0 2.0

WED105	Minimizing Workplace Stress	Introduction of the application of Practical Relaxation Techniques for reducing workplace stress. Defines the characteristics, process and signs of workplace stress. Includes discussions of the physiology of stress and how these responses impact daily living. Use of the biofeedback instruments to monitor the relaxation techniques such as self-hypnosis, visualization, guided imagery, and meditation	Prerequisites: None.	LEC 0.5 0.5 0.5
WED110	Principles of Physical Fitness and Wellness	Stress basic, lifetime health and skill-related components of fitness to achieve total wellness. Topics include nutrition, weight control, exercise and aging, cardiovascular and cancer risk reduction, stress management, prevention of sexually transmitted diseases, substance abuse control, and overall management of personal health and lifestyle habits to achieve the highest potential for well-being	Prerequisites: None.	LEC 3.0 3.0 3.0
WED120	Massage Therapy: Anatomy Refresher - Upper Body	This course is designed for individuals in the field of massage therapy and provides a review of upper body musculature affecting the neck, shoulder, spine, elbow and wrist joints. Origins and insertions and resistive stretches included.	Prerequisites: None.	L+L 1.0 1.0 1.0
WED121	Physical Conditioning for Massage Therapists	Physical fitness necessary for current and prospective massage therapists. Includes physical fitness and workout techniques as related to performing massage therapy; individual conditioning strategies, and basic nutritional guidelines.	Prerequisites: None.	L+L 1.0 2.0 2.0

WED124	Environmental Wellness	Overview of critical global environmental challenges and the impacts of these issues to human health. Topics to be covered include issues such as transportation options, alternative energy, food production, and air and water issues. Acquire skills, knowledge and wisdom specific to sustainability which may be applied in many professions, occupations, social institutions, or organizations. At an individual level, learn specific ways to conserve energy, protect your health, and help create sustainable living practices	Prerequisites: None.	LEC 3.0 3.0 3.0
WED125	Reiki: Healing and Symbols	Introduction to Reiki as a Japanese technique for stress reduction and relaxation that also promotes healing. Instruction in the Usui method of Reiki and its symbols and applications to personal health and everyday life.	Prerequisites: None.	L+L 2.0 2.0 2.0
WED126	Cupping Therapy	Introduction to cupping therapy for individuals in the field of massage therapy. In addition but not limited to the history, techniques and application in various therapeutic settings.	Prerequisites: None.	L+L 1.0 1.0 1.0
WED135	Gentle Touch for Individuals Living with Cancer	Introduction to the various types of gentle touch techniques used with individuals who are living with cancer and their caregivers. Overview of the history of gentle touch techniques, types of cancer and current treatments. Application of techniques with children and adults includes information on positioning, indications and contraindications, and additional special techniques.	Prerequisites: None.	L+L 2.0 2.0 2.0
WED144	Strategies in Diabetes Management	Introduction to strategies in diabetes mellitus management and prevention for individuals diagnosed with diabetes and their caretakers. Includes a physical activity component	Prerequisites: None.	L+L 3.0 5.0 5.0

WED145	Hand and Foot Massage	History and application of specific pressure points on the hands and feet that have correlation to different body organs and systems. Practice of micromovement techniques with the goal of creating a response throughout the body.	Prerequisites: None.	L+L 1.0 1.0 1.0
WED151	Introduction to Alternative Medicine	Definition of health; exploration of mind-body-spirit connection in health; various therapeutic modalities; identification of strengths and limitations of alternative therapies. Also includes development of ability to critically review written material in the alternative therapy area	Prerequisites: None.	LEC 3.0 3.0 3.0
WED152	Comparative Healing Techniques	Comparative approaches to healing, including allopathy, homeopathy, chiropractic, osteopathy, Chinese medicine, Ayurveda, Shamanism, and therapeutic touch. Contrast explanations for causation of disease, diagnostic procedures and healing methodology	Prerequisites: None.	LEC 3.0 3.0 3.0
WED155	Introduction to Chinese Medicine	Basic theories, principles and methods that constitute the backbone of Chinese Medicine. Explores concepts of Yin, Yang, the Five Elements (Wood, Fire, Earth, Metal, and Water), and the Five Vital substances (Qi, Blood, Body Fluids, Jing, and Shen). Overview of the physiology of the major internal organs (Five Zang and Six Fu) with a focus on their various interrelationships	Prerequisites: None.	LEC 3.0 3.0 3.0
WED156	Humor and Play	Physiological, psychological, emotional, and intellectual effects of humor and play; suggestions for planning periods of play and incorporating it into one's life	Prerequisites: None.	LEC 1.0 1.0 1.0

WED160	Ethics of Touch Massage	Basic ethical principles used in the practice of massage. Major emphasis on personal and professional boundaries, the role of dual relationships, effective communication, and special considerations in massage	Prerequisites: None.	LEC 0.5 0.5 0.5
WED162	Meditation and Wellness	Physiology of meditation and its effects on physical and mental health; scholastic abilities and interpersonal relationships; differentiation between meditation and other relaxation techniques	Prerequisites: None.	LEC 1.0 1.0 1.0
WED165	Overview of Massage Therapy	History of massage; overview of bodywork systems; benefits and indications of massage; legal requirements for practice in Arizona	Prerequisites: None.	LEC 2.0 2.0 2.0
WED166	Overview of FELDENKRAIS(R) Awareness Through Movement(R)	Movement activity lessons which are verbally directed, exploratory in nature, designed to clarify the full range of possibility for human movement and action. Self paced lessons in a noncompetitive environment	Prerequisites: None.	LEC 1.0 1.0 1.0
WED170	Principles of Homeopathy	Origins of homeopathy; key concepts; perceptions of disease; schools of homeopathy; scientific studies; preparation of remedies; case taking	Prerequisites: None.	LEC 1.0 1.0 1.0
WED172	Overview of Herbal Remedies	History and evolution of herbs for healing applications. Preparation, usage, and effects of certain herbs used for healing purposes. Basic literature review skills in the area of herbal medicine	Prerequisites: None.	LEC 1.0 1.0 1.0
WED176	Flower Essences	Healing properties of Bach flower remedies; Bach's development of remedies and his philosophy of healing; use and preparation of a variety of flower essences	Prerequisites: None.	LEC 1.0 1.0 1.0

WED181	Essential Oil Properties and Formulations	Focuses on the benefits of individual plant oils, profiling past to present day uses and documented properties; experiential evaluation of the oils; how to formulate topical blends; oil substitution using less expensive oils; hands-on learning.	Prerequisites: None.	L+L 1.0 1.0 1.0
WED182	Health Conditions and Popular Herbs	In-depth look at some of today's most popular herbs and their relationship to specific health conditions. Emphasis on research skills in relation to popular herbs. Includes the effects, uses, and application strategies of herbs.	Prerequisites: None. WED172 suggested but not required.	LEC 2.0 2.0 2.0
WED183	Introduction to Ayurvedic Principles	Introduction to Ayurveda: "the science of life"; a complete system of balancing the body, mind and spirit, originating from ancient India. Introduction to foundational Ayurvedic principles, health philosophy and self assessment of basic constitution. Application of basic health and self care practices such as food selection and preparation, exercise and movement, renewal and restoration activities, environmental influences to promote health and well-being.	Prerequisites: None.	L+L 2.0 2.0 2.0
WED185	Overview of Movement Therapy Systems	Definition of health, exploration of mind-body-spirit connection in health, various therapeutic modalities, identification of strengths and limitation of movement based therapies. Also includes development of ability to critically review written material in the physical or movement therapy area.	Prerequisites: None.	LEC 2.0 2.0 2.0
WED195	Special Topic in Wellness Education	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	LEC 0.5 0.5 0.5
WED195AA	Special Topics in Wellness Education A	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 0.5 1.0 1.0

WED195AB	Special Topics in Wellness Education A	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle. Focuses on a variety of techniques and strategies to promote wellness.	Prerequisites: None.	L+L 1.0 1.0 1.0
WED195AC	Special Topics in Wellness Education A	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle. Focuses on a variety of techniques and strategies to promote wellness.	Prerequisites: None.	L+L 2.0 2.0 2.0
WED195AD	Special Topics in Wellness Education A	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle. Focuses on a variety of techniques and strategies to promote wellness.	Prerequisites: None.	L+L 3.0 3.0 3.0
WED195BA	Special Topics in Wellness Education B	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 0.5 1.0 1.0
WED195BB	Special Topics in Wellness Education B	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 1.0 1.0 1.0
WED195BC	Special Topics in Wellness Education B	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 2.0 2.0 2.0
WED195BD	Special Topics in Wellness Education B	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 3.0 3.0 3.0
WED195CA	Special Topics in Wellness Education C	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 0.5 1.0 1.0
WED195CB	Special Topics in Wellness Education C	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 1.0 1.0 1.0
WED195CC	Special Topics in Wellness Education C	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 2.0 2.0 2.0



WED195CD	Special Topics in Wellness Education C	Introduction to current topics and contemporary issues related to developing and maintaining a healthy lifestyle.	Prerequisites: None.	L+L 3.0 3.0 3.0
WED204	Establishing a Massage Practice	Explore career options in therapeutic massage, including state licensing requirements, and determine how to lay the groundwork for a successful massage practice	Prerequisites: None.	LEC 3.0 3.0 3.0
WED210	Sports Massage	Purpose, benefits, and contraindications of sports massage; principles of sports physiology; massage techniques, applications, and procedures; treatment of injuries.	Prerequisites: A grade of C or better in WED165 and WED230 or permission of Program Director.	L+L 2.0 3.0 3.0
WED215	Self-Care for Health Care Providers	Emphasis on mind-body methods for personal wellness through integration of physical, emotional, social, and spiritual dimensions of being. Development of a personal practice to achieve and sustain a balanced program to support personal health and well being	Prerequisites: None.	L+L 2.0 5.0 5.0
WED218	Aromatherapy	Physiology of aromatherapy; methods of use; preparation of oils; uses in sports, beauty care, massage, child care, health care, at work, and in the home	Prerequisites: None.	LEC 1.0 1.0 1.0
WED225	Reiki: Master Level and Teacher Training	Advanced Usui method of Reiki, including but not limited to the preparation for placement of symbols, hand movements and attunements. Exploration of the four pillars of Reiki and 4th Reiki symbol and strategies for instruction, relationships and classroom management.	Prerequisites: A grade of C or better in WED125 or permission of Department or Division.	LEC 2.0 2.0 2.0
WED228	Aromatherapy: Therapeutic Applications	Continued study of the physiology of essential oils and effects on major body systems. Plant families, chemistry, therapeutic applications and contraindications regarding the use of essential oils; case studies and creation of personal blends.	Prerequisites: None.	L+L 2.0 2.0 2.0

WED230	Therapeutic Massage Practices I	Principles of professionalism, ethics, and legalities. Includes use of terminology related to massage therapy. Applications, indications, and contraindications of the nine strokes of Swedish massage. Study of the human osseous and muscular structure. Emphasis on normal movement patterns, origins, insertions, and functions of the muscular system	Acceptance into the Therapeutic Massage program or permission of Program Director.	L+L 6.0 9.0 9.0
WED231	Therapeutic Massage Practices II	Refined application of the nine strokes of Swedish massage and contraindications to avoid. Application of advanced principles and techniques of trigger point therapy, muscle energy technique, stretching, hydrotherapy protocols, hot and cold applications, reflexology, and corporate massage. Study of the human osseous and muscular structure. Emphasis on normal movement patterns and the origin, insertion, and function of the muscular system	Prerequisites: A grade of C or better in WED230.	L+L 6.0 9.0 9.0
WED232	Therapeutic Massage Practices III	Refinement and integration of technical skills, psychosocial competencies, and role identity. Exploration of techniques to assess and facilitate range of motion and function; purpose, benefits, indications, and contraindications of therapeutic massage for specific neuro-musculoskeletal disorders/injury and special populations. Application of massage techniques with therapists pre- and post-client evaluations of the client. Adaptation of massage techniques for special populations.	Prerequisites: A grade of C or better in WED231. Corequisites: WED250 or permission of Program Director.	L+L 6.0 10.0 10.0
WED250	Clinical Practicum	Application of fundamental massage techniques.	Prerequisites: A grade of C or better in WED231. Corequisites: WED232 and permission of Program Director.	LAB 3.0 6.0 0.0

WED250AA	Clinical Practicum: Part I	Application of fundamental massage techniques.	Prerequisites: A grade of C or better in WED231. Corequisites: WED232 and permission of Program Director.	LAB 1.5 3.0 0.0
WED250AB	Clinical Practicum: Part II	Continued application of fundamental massage techniques.	Prerequisites: A grade of C or better in WED250AA.	LAB 1.5 3.0 0.0
WED257	Kinetic Meditation	Focuses on posture, body movement, and energy centered meditations. In depth discussion of Chinese Chi Kung exercises and Chi Meditation. Reviews influence of Taoist and Buddhist philosophies on Chi Kung practice and stress management. Explores Kinetic Meditations, and scientific research into health benefits of Chi Kung practice.	Prerequisites: A grade of C or better in WED151, WED162, PED101DD and (PED101VR or PED101YJ) or permission of Department or Division.	L+L 2.0 2.0 2.0
WED258	Auditory Meditation	Focuses on the East Indian Yogic (Siddha) and Ayurvedic (Transcendental) meditation traditions and use of mantras, sounds and music in meditation. Discussion of the Vedanta System of Philosophy and the Bhagavad Gita. Explores the history and popularity of auditory meditations, and scientific research into the health benefits of Transcendental Meditation (TM) and other auditory meditations.	Prerequisites: A grade of C or better in WED257 or Corequisites: WED257 or permission of Department or Division.	L+L 2.0 2.0 2.0
WED259	Visual Meditation	Focuses on the use of physical objects and mental images as the focal point for meditation. Focuses on the standing and sitting meditation of the Egyptian and West African traditions and the pantheon of images used to represent life's day-to-day processes. Includes discussion of Egyptian and Yoruba philosophy and the use of natural and artistic items, special words or symbols, religious allegories, and graphic images as focal points for meditation.	Prerequisites: A grade of C or better in WED257 and WED258 or Corequisites: WED257 and WED258 or permission of Department or Division.	L+L 2.0 2.0 2.0

WED260	Massage For Special Populations	Purpose, benefits, indications, and contraindications of therapeutic massage for special populations. Application of massage techniques with pre- and post-massage evaluations.	Prerequisites: A grade of C or better in WED250 and permission of Instructor.	L+L 2.0 3.0 3.0
WED262	Acupressure/Shiatsu I	Overview of the principles of Traditional Chinese Medicine and the Meridian System; history, purpose, benefits, indications, and contraindications of Acupressure/Shiatsu. Therapeutic techniques and applications of Acupressure/Shiatsu; pre and post evaluations of intervention procedures	Prerequisites: None.	L+L 2.0 3.0 3.0
WED275	Practicum: Teaching Healing, Meditation and Stress Management	Application, teaching, and training of fundamental healing meditation and stress management techniques.	Prerequisites: A grade of C or better in WED259 and permission of Instructor.	LAB 3.0 15.0 0.0
WED281	Intrinsic Coach™ Development	Development of intrinsic thinking skills, enabling intrinsic strategizing, and building on intrinsic resources to create a link between information about wellness and information enacted through healthy behavior change. Emphasis is on application of Intrinsic Coaching™ methodology.	Prerequisites: None.	LEC 3.0 3.0 3.0
WED282AA	Service-Learning Experience in Wellness Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 1.0 1.0 0.0
WED282AB	Service-Learning Experience in Wellness Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 2.0 2.0 0.0
WED282AC	Service-Learning Experience in Wellness Education	Unpaid Service-Learning (SL) experience, completed with approved community partner.	Prerequisites: Permission of Instructor.	LAB 3.0 3.0 0.0
WED297AA	Special Topics: Therapeutic Massage	Explores a special topic related to therapeutic massage. Topics vary and include concepts relevant to those pursuing careers in therapeutic massage	Prerequisites: None.	L+L 1.0 1.0 1.0

WED297AB	Special Topics: Therapeutic Massage	Explores a special topic related to therapeutic massage. Topics vary and include concepts relevant to those pursuing careers in therapeutic massage	Prerequisites: None.	L+L 2.0 2.0 2.0
WED297AC	Special Topics: Therapeutic Massage	Explores a special topic related to therapeutic massage. Topics vary and include concepts relevant to those pursuing careers in therapeutic massage	Prerequisites: None.	L+L 3.0 3.0 3.0
WED298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
WED298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

WED298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
WFR110	Re-Entry Skills: Personal Skill Development	Personal skill development necessary for transition from incarceration to community. Includes development of a personal value system and decision-making strategies as well as conflict management. Also covers time and money management, goal setting, and the basics for everyday life	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
WFR112	Re-Entry Skills: Family Reunification	Reunification procedures for the incarcerated person's effective transition. Includes building and maintaining self-esteem and effective communication for healthy families or support systems. Also covers family and networking culture, discipline, and expectations for release	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
WFR114	Re-entry Skills: Social Skill Development	Social skill development for the incarcerated person preparing to re-enter society. Includes identifying and establishing boundaries as well as modeling these behaviors. Also covers identification of core emotions and development of positive character traits	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0
WFR116	Re-Entry Skills: Substance Abuse Education	Substance abuse education for incarcerated persons. Includes warning signs and the "chain of events" to addiction. Also covers decision making skills as well as strategies and resources available for prevention	Prerequisites: Permission of Department or Division.	LEC 1.0 1.0 1.0

WFR118	Re-Entry Skills: Job Readiness	Preparing the incarcerated person for release into the working world. Includes education, skills assessment, and work experience. Also covers job search skills such as resume writing, applications, and interviewing	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
WFR120	Re-Entry Skills: Job Retention	Job retention procedures and techniques for incarcerated persons in transition. Includes workplace protocol, job performance, and employer-employee interaction. Also covers stress management and communication skills as well as interpersonal relationships in the workplace	Prerequisites: Permission of Department or Division.	LEC 2.0 2.0 2.0
WKO298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
WKO298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

WKO298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
WLD100	Basic Welding	Shop procedures, safety and personal protection. Grinders, drill presses, and saws. Resistance and oxyacetylene welders. Arc welders: alternating current (AC) and direct current (DC) modes, electrodes, positioning and securing	Registered apprentice status or permission of the apprenticeship coordinator.	LEC 2.0 2.0 2.0
WLD101	Introduction to Welding	Introduction to safe operation of shop equipment and common joining and thermal cutting processes used in the welding industry. It is designed to provide a brief exposure to the SMAW, GMAW, FCAW, GTAW, OFW, OFC, PAC processes while developing incremental hands-on skills through sequenced lab experiences.	Prerequisites: None.	L+L 3.0 6.0 6.0
WLD102	Basic Welding Metal Sculpture	Practical training for welders in artistic welding and metal sculpter with emphasis on oxy-ace welding, arc welding, and metal inert gas (MIG) welding.	Prerequisites: None.	L+L 3.0 6.0 6.0
WLD103	Basic Blacksmithing and Metal Shaping	Selection and safe use of blacksmithing and metal shaping tools and equipment. Material selection and conditioning, practical forging techniques, metal shaping experience, and finishing processes.	Prerequisites: None.	L+L 3.0 8.0 8.0



WLD105	Gas Welding	Practical work to train welders in the field of structural steel construction. Provides an introduction to welding and oxyacetylene cutting. Typical welded joints, such as butt, lap, fillet and corner welds made in all positions. Skills developed in cutting and beveling steel plates and in oxyacetylene flame-piercing structural steel plates. Includes brazing	Prerequisites: None.	L+L 5.0 8.0 8.0
WLD106	Arc Welding	Electric welding with emphasis on metallic arc welding in out-of-position practice and procedures	Prerequisites: None.	L+L 5.0 8.0 8.0
WLD106AA	Introduction to SMAW	Introduction to arc welding with emphasis in Shielded Metal Arc Welding (SMAW). Designed to provide the knowledge and skills needed to cut and prepare weld joints utilizing current technology. Develops hands-on skills through sequenced lab experiences.	Prerequisites: None.	L+L 5.0 8.0 8.0
WLD106AB	SMAW 6010 Plate	Continued training in shielded metal arc welding (SMAW) with emphasis on using E6010 (fast-freeze) electrodes in all joint positions. Focus is on fillet welds for structural steel and open root groove weld joints.	Prerequisites: A grade of C or better in WLD106AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD106AC	SMAW 7018 Plate	Continued training in shielded metal arc welding (SMAW) with emphasis on using E7018 (low hydrogen) electrodes in all joint positions. Focus is on fillet welds and groove weld joints with backing to prepare students for welding code certification testing.	Prerequisites: A grade of C or better in WLD106AA or permission of Instructor.	L+L 5.0 8.0 8.0

WLD106AD	SMAW Introduction to Pipe	Advanced training in shielded metal arc welding (SMAW) with emphasis on pipe welding using E6010 and E7018 electrodes in various pipe joint positions (1G, 2G, 5G, 6G). Focus is on the open root groove pipe weld joints to prepare students for industry code certification.	Prerequisites: A grade of C or better in WLD106AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD131	Ferrous Metals	Use of ferrous metals, specification of ferrous metals, use of identification and study of welding industry standards	Prerequisites: None.	LEC 3.0 3.0 3.0
WLD150	Welding Blueprint Reading	Analysis and interpretation of technical drawings common to the metal fabrication and construction trades. Welding blueprint symbols.	Prerequisites: None.	LEC 3.0 3.0 3.0
WLD201	Advanced Welding Concepts	Further study of electric arc and oxyacetylene welding with emphasis on GTAW (heliarc) and GMAW (mig) processes to weld both ferrous and nonferrous metal.	Prerequisites: A grade of C or better in WLD101.	L+L 3.0 6.0 6.0
WLD202	Construction Welding III	Metal arc welding processes, blueprint and weld symbol reading, joint layout preparation and welding procedures, gas-tungsten arc welding with related instruction in practice on ferrous and nonferrous metals	Prerequisites: Permission of Instructor.	L+L 3.0 5.0 5.0
WLD203	Welding Certification Preparation	Emphasis on the weld certification process including the Welding Procedure Qualification Record (WPQR), Welder Performance Qualification Test Record (WPQTR), and the Weld Procedure Specification (WPS) in Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), or Gas Metal Arc Welding (GMAW) welding processes.	Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator.	L+L 6.0 6.0 6.0

WLD206	Advanced Welding - Heliarc and Wire Feed	Instruction in theory and practice on tungsten inert gas and wire feed welding. Welding procedures on ferrous and nonferrous metals. Set up and operation of all types of machines used in tig and mig welding	Prerequisites: A grade of C or better in WLD106 or permission of Department or Division.	L+L 5.0 8.0 8.0
WLD206AA	Introduction to GMAW/FCAW and GTAW	Instruction in theory and practice of gas metal arc welding (GMAW, commonly referred to as MIG), flux cored arc welding (FCAW), and gas tungsten arc welding (GTAW, commonly referred to as TIG). Basic welding procedures on ferrous and nonferrous metals. Setup and operation of welding process equipment. Covers selection of proper filler materials and shielding gas options.	Prerequisites: A grade of C or better required in WLD106AA or permission of Instructor or Corequisites: WLD106AA.	L+L 5.0 8.0 8.0
WLD206AB	Advanced GMAW and FCAW	Instruction and practice of gas metal arc welding (GMAW) and flux cored arc welding (FCAW) in the horizontal, vertical, and overhead positions. Prepare for industry code performance qualification plate tests with both welding processes.	Prerequisites: A grade of C or better in WLD206AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD206AC	Advanced GTAW Non-Ferrous	Instruction and practice of gas tungsten arc welding (GTAW) aluminum sheet in the flat, horizontal, and vertical positions. Prepare for industry code performance qualification tests in any welding position.	Prerequisites: A grade of C or better in WLD206AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD206AD	Advanced GTAW Ferrous	Instruction and practice of gas tungsten arc welding (GTAW) carbon and stainless-steel in any position. Prepare for industry code performance qualification tests in any welding position.	Prerequisites: A grade of C or better in WLD206AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD208	Advanced Arc Welding - Certification	Advanced metallic arc welding emphasizing out-of-position welding in preparation for certification. Includes various test methods. Provides training on machine flame cutting and gouging and arc air cutting and gouging	Prerequisites: A grade of C or better in WLD106 or permission of Instructor.	L+L 5.0 8.0 8.0

WLD208AA	SMAW Code Welding	Advanced training in shielded metal arc welding (SMAW) to achieve successful welder performance qualification testing in any position. Focus is on single v-groove weld joints per industry codes and specification requirements.	Prerequisites: A grade of C or better in WLD106AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD208AB	GMAW Code Welding	Advanced training in gas metal arc welding (GMAW) with emphasis on achieving successful welder performance qualification testing in any position. Focus is on groove weld joints per industry codes.	Prerequisites: A grade of C or better in WLD206AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD208AC	FCAW Code Welding	Advanced training in flux cored arc welding (FCAW) with emphasis on achieving successful welder performance qualification testing in any position. Focus is on groove weld joints per industry codes.	Prerequisites: A grade of C or better in WLD206AA or permission of Instructor.	L+L 5.0 8.0 8.0
WLD208AD	SMAW Code Welding Pipe	Advanced training in pipe welding using either shielded metal arc welding (SMAW), gas metal arc welding (GMAW), or flux cored arc welding (FCAW) with emphasis on achieving successful welder performance qualification testing in any position. Focus is on groove weld joints per industry codes.	Prerequisites: A grade of C or better in WLD106AD or WLD208AA, or permission of Instructor.	L+L 5.0 8.0 8.0
WLD214	American Welding Society Certification Preparation	Principles and techniques of electric arc welding and American Welding Society (AWS) certification requirements, certification pretest and preparation. Technical theory and skill training in all position welding processes.	Prerequisites: A grade of C or better in (WLD101 and registered apprenticeship status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
WLD215	Welding Fabrication	Utilize welding skills to produce a major product. Design, plans, procedure sheet, and selected fabrication processes required. Purchase of necessary materials, and completion of a finished usable product	Prerequisites: A grade of C or better in WLD101 and WLD206.	L+L 3.0 6.0 6.0

WLD215AA	Weld Fabrication I for Millwrighting	Layout, fabrication and basic skills of measuring, cutting, shaping, grinding, drilling and tapping, welding, filing, shimming, heating and bending of metal parts. Safe and proper use of all necessary hand and power tools.	Prerequisites: A grade of C or better in (WLD214 and registered apprenticeship status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
WLD215AB	Weld Fabrication II for Millwrighting	Welding layout and fabrication. Advanced skills in measuring, cutting, shaping, grinding, drilling and tapping, welding, filing, shimming, heating and bending of metal parts. Safe and proper use of all necessary hand and power tools.	Prerequisites: A grade of C or better in (WLD215AA and registered apprenticeship status) or permission of the Apprenticeship Coordinator.	L+L 2.0 2.0 2.0
WLD225	Welding Inspection and Quality Control	Welding inspection and quality control standards and practices in the construction and fabrication industries. Welding inspector certification requirements and functions performed in industry.	Prerequisites: A grade of C or better in WLD106++ or permission of Instructor.	LEC 3.0 3.0 3.0
WLD296WA	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 1.0 5.0 0.0

WLD296WB	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 2.0 10.0 0.0
WLD296WC	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 3.0 15.0 0.0
WLD296WD	Cooperative Education	Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students.	Completion of at least twelve (12) college credits minimum 2.6 grade point average and be able to obtain a position related to students academic or career goals (students present job may qualify or permission of instructor Corequisites: Must be concurrently enrolled in at least one class which is related to students major or career interest or with permission of Instructor.	LAB 4.0 20.0 0.0

WLD298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
WLD298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
WLD298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0

WRT100	Introduction to Water Resources	Fundamental principles of water resources. Basic concepts and strategies in the study of water, the current focus on water pollution and water purification. Topics include ground water, surface water, water quality, water purification, and water pollution. Presentation of ongoing studies related to work of earth scientists.	Prerequisites: Admission to the Water Resources Technology program and placement into MAT120, MAT121, MAT122, MAT150, MAT151, MAT152, or higher-level mathematics course for which College Algebra is a prerequisite or permission of the Program Director.	LEC 3.0 3.0 3.0
WRT101	Introduction to Water Resources Field Experiences	Fundamental principles of water resources. Basic concepts and strategies in the study of water, the current focus on water pollution and water purification. Topics include ground water, surface water, water quality, water purification, and water pollution. Presentation of ongoing studies related to work of earth scientists. Hands-on experiences in the field.	Prerequisites: Permission of Department or Division.	L+L 4.0 6.0 6.0
WRT102	Water Resources Computations and Data Analysis	Fundamentals of water resources technology formulas for real-world problems. Discussion of best practices in water resources given the results of the calculations.	Prerequisites: Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher level mathematics course.	LEC 3.0 3.0 3.0
WRT104AA	Survey of Water Technologies	Fundamental principles of water technologies. Basic concepts and strategies in water/wastewater treatment, distribution, collections and high purity water treatment. Need for water purification, water/wastewater treatment. Duties of water/wastewater/collections/distributions operators and purification technicians	Prerequisites: None.	LEC 1.0 1.0 1.0
WRT106	Small Water System Operation and Maintenance	Overview of safe and effective operation and maintenance of small drinking water systems and treatment plants. Also covers wells, pumps, disinfection and setting water rates.	Prerequisites: A grade of C or better in WRT110, or permission of Department or Division.	LEC 3.0 3.0 3.0



WRT108	Fundamentals of Environmental Science Technology	This course provides fundamental concepts and problem-solving methods that address environmental conditions, pollution monitoring and prevention, and approaches for protecting air, land and water using technology.	Prerequisites: Admission into the Water Resources Technology program. Corequisites: WRT100 or permission of Program Director.	LEC 3.0 3.0 3.0
WRT110	Principles of Water Treatment Plant Operations	Principles in the safe and effective operation and maintenance of drinking water treatment plants, reservoir management and intake structuring. The source of water, basic water laboratory test procedures and calculations also covered.	A grade of C or better required in all Prerequisites. Prerequisites: Admission to the Water Resources Technology program. Prerequisites or Corequisites: WRT100 or permission of Program Director.	LEC 3.0 3.0 3.0
WRT111	Hydrologic Data	Types of hydrologic data, uses of data, sources of data, collection and processing of data. Topics include surface water, ground water, and water quality data. Actual data processing, uses, presentation, and publication.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
WRT112	Surface-Water Records Computation	Computation and analysis of surface-water records. Emphasis on physical interpretation of measured data as an aid in analyzing the surface-water record. Computer processing used	Prerequisites: None.	LEC 1.5 1.5 1.5
WRT113	Basic Water Treatment Processes	Exploration of the processes used in the treatment of water. Principles of coagulation and flocculates, sedimentation, and disinfection explored. Also includes operation of equipment used in water treatment, prevention of corrosion, and taste and odor control.	Prerequisites: A grade of C or better in WRT110.	LEC 3.0 3.0 3.0
WRT114	Mineral Control	Operation and maintenance processes in the treatment for iron, manganese, hardness, trihalomethanes and minerals. The importance of fluoridating drinking water and water softening.	Prerequisites: A grade of C or better in WRT110, or permission of Department or Division.	LEC 3.0 3.0 3.0

WRT115	Water Technology Calculations	Application of water technology formulas for operation and maintenance of water/wastewater plants and distribution and collections systems. Includes operator examination preparation and discussion of best practices in water technologies given the results of the calculations.	A grade of C or better required in all Prerequisites. Prerequisites: Admission to the Water Resources Technology program. Prerequisites or Corequisites: WRT100 or permission of Program Director.	LEC 3.0 3.0 3.0
WRT116	Water Treatment Plant Administration	Administration safety and maintenance of a water treatment plant. Handling and disposal of process wastes, instrumentation use, laboratory procedures, drinking water regulations.	Prerequisites: A grade of C or better in WRT110 or permission of Department or Division.	LEC 3.0 3.0 3.0
WRT117	Geographic Information Systems (GIS)	Purpose and applications of desktop Geographic Information Systems (GIS) technology applied to water resources and planning. ArcView software program applications and data management. Includes data query and spatial data functions. Analysis of spatial relationships and presentation of spatial information.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in BPC110, or CIS105, or permission of Program Director).	LEC 3.0 3.0 3.0
WRT120	Hydrologic Instrumentation	Overview of operating hydrologic data gathering equipment used in surface water, groundwater and water quality sampling networks. Continuous monitoring records, electronics, data collection problems, and methods of installation of instruments. Safety stressed.	Prerequisites: A grade of C or better in WRT100 or WRT101 or permission of Department or Division.	L+L 4.0 6.0 6.0
WRT121	Operation of Wastewater Treatment Plants	Safe and effective operation and maintenance of wastewater treatment plants. Overview of treatment processes and laboratory testing used in wastewater treatment plants. Principles and processes involved in waste treatment ponds, disinfection and chlorination process.	A grade of C or better required in all Prerequisites. Prerequisites: Admission to the Water Resources Technology program. Prerequisites or Corequisites: WRT100 or permission of Program Director.	LEC 3.0 3.0 3.0

WRT122	Basic Wastewater Treatment Processes	Exploration of the processes used in the preliminary treatment of wastewater. Operation of equipment used in wastewater treatment, principles of sedimentation and flotation, trickling filters, biological contactors, and activated sludge also included.	Prerequisites: A grade of C or better in WRT121.	LEC 3.0 3.0 3.0
WRT124	Sludge and Solids Handling	Exploration of conventional activated sludge plant operations including principles of activated sludge and sludge digestors used in wastewater treatment. Laboratory procedures and effluent disposal included.	Prerequisites: A grade of C or better in WRT121, or permission of Department or Division.	LEC 3.0 3.0 3.0
WRT125	Surveying for Water Resources	Fundamental surveying principles utilized in water field studies. Level and transit, horizontal measurement by tape or stadia. Benchmark and profile leveling traverse surveys and computations and establishment of line and grade.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT100 or permission of Program Director).	LEC 2.0 2.0 2.0
WRT126	Wastewater Plant Administration	Administrative responsibilities in operating a wastewater plant including safety and maintenance. Emphasis on laboratory procedures, reporting data in reports and graphs and recordkeeping.	Prerequisites: A grade of C or better in WRT121 or permission of Department or Division.	LEC 3.0 3.0 3.0
WRT130	Groundwater Hydrology	Fundamentals of groundwater resources. Includes basic flow equations, well hydraulics, groundwater fluctuations, artificial recharge and basic-data collection techniques. Emphasis on the use of data in analysis of local and regional flow systems.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT100 or permission of Program Director).	LEC 3.0 3.0 3.0
WRT130LL	Groundwater Field Techniques	Field exercises to acquire groundwater data and service data-gathering equipment. Safety procedures stressed.	Prerequisites: A grade of C or better in WRT130 or Corequisites: WRT130 or permission of Department or Division.	LAB 1.0 3.0 3.0

WRT131	Wastewater Collection Systems Operation and Maintenance	Overview of wastewater collection systems with an emphasis on inspection and cleaning of sewer systems. Safety considerations, maintenance and underground repair procedures also covered.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT100 and WRT115, or permission of Program Director).	LEC 3.0 3.0 3.0
WRT132	Wastewater Collection Systems Administration	Overview of administrative duties of operating a wastewater collection systems. Principles of lift stations, equipment maintenance and sewer rehabilitation also covered.	Prerequisites: A grade of C or better in WRT131.	LEC 3.0 3.0 3.0
WRT134	Water Distribution System Operation and Maintenance	Safe and effective operation and maintenance of water distribution systems. Water contaminants, disinfection and chlorination in addition to development of a plant safety plan.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT100 and WRT115, or permission of Program Director).	LEC 3.0 3.0 3.0
WRT140	Water Quality for Treatment Industry	Introduction to water quality including common parameters in the treatment industry, regulations, and types and methods of monitoring. Laboratory safety, sampling and reporting, wet analytical methods, sample analyses, and process chemistry.	Prerequisites: Admission to the Water Resources Technology program. Prerequisites: A grade of C or better in WRT100 or Corequisites: WRT100 or permission of the Program Director.	LEC 5.0 3.0 3.0 0.0 6.0 6.0
WRT140LL	Water Quality for Treatment Industry Laboratory	Laboratory safety, sampling and reporting; wet analytical methods; sample analyses; process chemistry.	Prerequisites: A grade of C or better in WRT140 or Corequisites: WRT140 or permission of Department or Division.	LAB 1.0 3.0 3.0
WRT150	Introduction to Surface Water Data Collection	Fundamentals of surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, recording and retrieving surface water data.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT100 or permission of Program Director).	LEC 3.0 3.0 3.0
WRT150LL	Introduction to Surface Water Data Collection Field Techniques	Hands-on experience in surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, and recording surface water data.	Prerequisites: A grade of C or better in WRT150 or Corequisites: WRT150 or permission of Department or Division.	L+L 2.0 3.0 3.0

WRT152	Water Resources Field Investigations I: Groundwater and Surface Water	Hands-on experience and field exercises to acquire surface water and groundwater data and service data-gathering equipment. Hands-on experience in surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, and recording surface water and groundwater data. Safety procedures stressed.	A grade of C or better required in all Prerequisites. Prerequisites: Admission to the Water Resources Technology program. Prerequisites or Corequisites: WRT130 and WRT150, or permission of Program Director.	L+L 3.0 6.0 6.0
WRT153	Environmental Law and Regulations	Introduction to various environmental laws and fundamentals of environmental laws relating to federal, state, and local levels. Overview and application of the permitting processes related to drinking and wastewater designed to provide a better sense of real-world issues from a regulator and regulated standpoint.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT108 or permission of Program Director).	LEC 3.0 3.0 3.0
WRT171	Water Quality Sampling	Surface water and groundwater sampling techniques for Arizona water quality monitoring. Field exercises for the acquisition of water quality data and for the use of service data gathering equipment. Quality assurance, quality control, and data processing techniques included. Emphasis on safety procedures.	Prerequisites: None.	L+L 1.0 2.0 2.0
WRT180	Environmental Sampling and Analysis	Introduction to the theory and methodology of sampling and analysis of environmentally significant parameters in water, wastewater, hazardous waste, soil, sediment, and air.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT100 and WRT108, or permission of Program Director).	LEC 5.0 3.0 3.0 LAB 0.0 6.0 6.0
WRT190AA	Water Resources Technologies Seminar	Interaction with other students and professionals in the water resources technologies industry. Stress placed on sharing knowledge and demonstrating understanding through discussion of current issues in the industry, operational tasks, and emerging issues.	Prerequisites: None.	LEC 1.0 1.0 1.0

WRT200	Industrial Pretreatment	Principles of industrial pretreatment programs. Overview of industrial facilities inspections and pollution prevention strategies. Sampling techniques of industrial wastewaters. Field exercises to acquire industrial wastewater quality data and industrial discharge flow measurements. Quality Assurance/Quality Control (QA/QC), and data processing techniques included. Safety procedures stressed.	A grade of C or better required in all Prerequisites. Prerequisites: Admission to the Water Resources Technology program. Prerequisites or Corequisites: WRT100 or permission of Program Director.	LEC 3.0 3.0 3.0
WRT203	Chemical and Biochemical Processes in Water/Wastewater Treatment	The chemical and biochemical processes used for the treatment of water and wastewater.	Prerequisites: Permission of Department or Division.	LEC 3.0 3.0 3.0
WRT204	Water/Wastewater Mechanical Systems, Power, and Instrumentation	Maintenance of facilities and equipment in both water and wastewater systems. Principles of basic electricity, electrical circuits, motors, transformers, and process control instrumentation.	Prerequisites: Admission to the Water Resources Technology program and permission of the Program Director.	LEC 3.0 3.0 3.0
WRT205	Power and Instrumentation	Principles of basic electricity, electrical circuits, motors, transformers, and process control instrumentation.	Prerequisites: A grade of C or better in WRT110 or WRT121 or WRT131 or WRT134.	LEC 3.0 3.0 3.0
WRT207	Groundwater Production and Management	Basic hydrology and hydrogeology; construction of water wells from site selection and specifications through drilling, design, development, testing, and equipping; rehabilitation of existing wells, Arizona Groundwater Management Law of 1980; water quality; common operational problems of well fields; types and purposes of monitoring wells.	Prerequisites: A grade of C or better in WRT100 or permission of Program Director.	LEC 3.0 3.0 3.0
WRT210	Membrane Technologies	Fundamentals of reverse osmosis. Basic theory and function of membrane technologies, membrane design and use, element configuration, maintenance, and record keeping.	Prerequisites: A grade of C or better in [(WRT110 or WRT121) and (WRT140 and WRT140LL)] or permission of Department or Division.	LEC 3.0 3.0 3.0

WRT218	Troubleshooting Membrane Technologies	Troubleshooting reverse osmosis (RO) systems. Hands-on experiences with actual RO systems and membrane technologies. Maintenance, problem solving and cleaning procedures.	Prerequisites: A grade of C or better in WRT120 or Corequisites: WRT210 or permission of Department or Division.	LAB 1.0 3.0 3.0
WRT221	Water and Wastewater Treatment Plants Administration	Administration safety and maintenance of a water and wastewater treatment plants. Handling and disposal of process wastes and instrumentation use. Emphasis on reporting data in reports, graphs, and record keeping.	A grade of C or better required in all Prerequisites. Prerequisites: Admission to the Water Resources Technology program. Prerequisites or Corequisites: WRT110 or WRT121 or permission of Program Director.	LEC 3.0 3.0 3.0
WRT223	Wastewater Chemical Removal	Advanced principles of the chemical removal processes in wastewater treatment. Emphasis on influent and effluent sampling, determining correct methods to remove identified chemicals, wastewater reclamation and instrumentation.	Prerequisites: A grade of C or better in WRT121 or permission of Department or Division.	LEC 3.0 3.0 3.0
WRT230	Ion Exchange Technologies	Basic theory and function of de-ionization systems. Design, use, element configuration maintenance and record keeping of de-ionization systems.	Prerequisites: A grade of C or better in WRT210 or Corequisites: WRT210 or permission of Department or Division.	LEC 3.0 3.0 3.0
WRT238	Troubleshooting Ion Exchange Technologies	Troubleshooting operational problems of an ion exchange system, in a hands-on environment. Calibration of ion exchange instruments. Methods of maintenance, problem solving and cleaning of ion exchange systems.	Prerequisites: A grade of C or better in WRT230 or Corequisites: WRT230 or permission of Department or Division.	LAB 1.0 3.0 3.0
WRT240	Water Quality	Fundamental chemical and physical factors involved in evaluating water quality. Water quality deterioration from land fills, underground storage tanks, and hazardous waste. Sampling techniques of groundwater, soil, and surface water. Quality assurance, quality control, and data processing techniques included.	Prerequisites: A grade of C or better in WRT140, or permission of Department or Division.	LEC 3.0 3.0 3.0

WRT240LL	Water Quality Field Techniques	Field exercises to acquire water quality data and service data gathering equipment. Safety procedures stressed.	Prerequisites: A grade of C or better in WRT240 or Corequisites: WRT240 or permission of Department or Division.	LAB 1.0 3.0 3.0
WRT250	Surface Water Hydrology	Fundamentals of surface water, understanding of surface water features, and characteristics and parameters impacting surface water features. Conducting hydrologic modeling and on modeling itself.	Prerequisites: A grade of C or better in WRT117 and WRT150, or permission of Department or Division.	LEC 3.0 3.0 3.0
WRT250LL	Surface Water Field Techniques	Field exercises to acquire surface water data and develop hydrologic models. Safety procedures stressed.	Prerequisites: A grade of C or better in WRT150LL. Prerequisites or Corequisites: WRT250 or permission of Department or Division.	L+L 2.0 3.0 3.0
WRT252	Water Resources Field Investigations II: Surveying and Surface Water	Field reconnaissance of water resources. Lab experiences in surveying techniques and procedures. Field exercises to acquire surface water data and develop hydrologic models. Safety procedures stressed.	Prerequisites: Admission into the Water Resources Technology program and (a grade of C or better in WRT152 or permission of Program Director).	L+L 3.0 6.0 6.0
WRT253	Basic Hydraulic Principles	Basic open channel flow principles including velocity profiles, roughness coefficients and backwater computation	Prerequisites: A grade of C or better in WRT250 or permission of Department or Division.	LEC 3.0 3.0 3.0
WRT258AA	Surface Water Field Methods: Part I	An overview of field techniques and instrumentation as applied to evaporation, rainfall, transpiration, discharge measurements and gathering of surface water field data. Safety procedures stressed.	Prerequisites: A grade of C or better in WRT250 or permission of Department or Division.	LAB 0.5 1.5 1.5
WRT260	Applied Hydrology: Groundwater, Surface Water and Water Quality	Theory and project-based experience in water resources technology. Data collection, data processing and data interpretation for groundwater, surface water and water quality studies. Using and servicing data gathering equipment. Safety procedures stressed.	Prerequisites: A grade of C or better in (WRT152, WRT240LL and WRT252) or permission of Department or Division.	L+L 3.0 5.0 5.0



WRT270AA	Water Resources Internship	Water resources work experience in business, industry, or government. Eighty (80) hours of designated work per credit.	Prerequisites: Permission of Department or Division.	LAB 1.0 6.0 0.0
WRT270AB	Water Resources Internship	Water resources work experience in business, industry, or government. Eighty (80) hours of designated work per credit [total of one hundred sixty (160) hours].	Prerequisites: Permission of Department or Division.	LAB 2.0 12.0 0.0
WRT270AC	Water Resources Internship	Water resources work experience in business, industry, or government. Eighty (80) hours of designated work per credit [total of two hundred forty (240) hours].	Prerequisites: Permission of Department or Division.	LAB 3.0 18.0 0.0
WRT271	Industrial Wastewater Treatment for Biotechnology	Principles of wastewater treatment for biotechnology. Overview of industrial facilities inspections and pollution prevention strategies. Sampling techniques of industrial wastewaters. Quality assurance, quality control (QA/QC), and data processing techniques included. Safety procedures stressed.	Completion of Associate in Applied Science in Water Technologies degree or completion of Associate in Applied Science in Air Conditioning/Refrigeration/Facilities degree.	L+L 4.0 6.0 6.0
WRT280AA	Arizona Water Certification Review: Treatment Grades 1 and 2	Refresher course in preparation for state certification testing for the operation, supervision and administration of water treatment systems.	Prerequisites: None.	LEC 0.5 0.5 0.5
WRT280AB	Arizona Water Certification Review: Treatment Grades 3 and 4	Refresher course in preparation for state certification testing for the operation, supervision and administration of water treatment systems.	Prerequisites: None.	LEC 0.5 0.5 0.5
WRT280AC	Arizona Water Certification Review: Distribution Grades 1 and 2	Refresher course in preparation for state certification testing for the operation, supervision and administration of water distribution systems.	Prerequisites: None.	LEC 0.5 0.5 0.5
WRT280AD	Arizona Water Certification Review: Distribution Grades 3 and 4	Refresher course in preparation for state certification testing for the operation, supervision and administration of water distribution systems.	Prerequisites: None.	LEC 0.5 0.5 0.5

WRT281AA	Arizona Wastewater Certification Review: Wastewater Treatment Grades 1 and 2	Refresher course in preparation for state certification testing for the operation, supervision and administration of wastewater treatment systems.	Prerequisites: None.	LEC 0.5 0.5 0.5
WRT281AB	Arizona Wastewater Certification Review: Wastewater Treatment Grades 3 and 4	Refresher course in preparation for state certification testing for the operation, supervision and administration of wastewater treatment systems.	Prerequisites: None.	LEC 0.5 0.5 0.5
WRT281AC	Arizona Wastewater Certification Review: Collections Grades 1 and 2	Refresher course in preparation for state certification testing for the operation, supervision and administration of wastewater collection systems.	Prerequisites: None.	LEC 0.5 0.5 0.5
WRT281AD	Arizona Wastewater Certification Review: Collections Grades 3 and 4	Refresher course in preparation for state certification testing for the operation, supervision and administration of wastewater collection systems.	Prerequisites: None.	LEC 0.5 0.5 0.5
WRT298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0
WRT298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0

WRT298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
WST100	Introduction to Women's and Gender Studies	Introduction to critical issues in women's studies.	Prerequisites: None.	LEC 3.0 3.0 3.0
WST120	Gender, Class and Race	A feminist discussion of gender, class and race as basic and central social categories that determine how we see ourselves and others and how they circumscribe our opportunities and privileges in American society.	Prerequisites: None.	LEC 3.0 3.0 3.0
WST128	Law and Violence Against Women	Covers cases and materials on systems of oppression particularly as related to women in our society. Areas covered include battering, sexual harassment, sexual assault, prostitution, and pornography as exemplified in present-day society. Designed to give students the ability to identify problems of violence against women and participate in current societal discourse on various ways to resolve them	Prerequisites: None.	LEC 3.0 3.0 3.0
WST160	Women and the Early American Experience	Introduction to American women's history, from the colonial period to suffrage in 1920, based on a feminist perspective.	Prerequisites: None.	LEC 3.0 3.0 3.0
WST161	American Women Since 1920	Continuation of the history of women in America from 1920 to the present, based on a feminist perspective. Includes discussion of the roles and status of immigrant and ethnic minority women	Prerequisites: None.	LEC 3.0 3.0 3.0

WST200	Essential Feminist Writing	Literary tracing of feminism from 18th century to present. Explores major issues related to women in the 20th century	Prerequisites: A grade of C or better in ENG101 or permission of Instructor.	LEC 3.0 3.0 3.0
WST206	La Mujer	Analysis and discussion of critical issues for Latinas in America today	Prerequisites: None.	LEC 3.0 3.0 3.0
WST207	Black Women	Analysis and discussion of critical issues for Black women in America today	Prerequisites: None.	LEC 3.0 3.0 3.0
WST209	Women and Films	Analysis of images of women in films from both historical and contemporary perspectives	Prerequisites: None.	LEC 3.0 3.0 3.0
WST244	Women in Muslim Societies	Overview of Muslim women's religious and secular roles and rights. Relationship of the Qur'an and Hadiths' teachings on women to the interpretations of those teachings within the variegated cultural contexts of Islam	Prerequisites: None.	LEC 3.0 3.0 3.0
WST282AA	Volunteerism for Women's Studies: A Service Learning Experience	Service learning field experience within private/public agencies and citizen volunteer groups. Students will develop writing skills, analysis, and synthesis in an on-site volunteer experience.	Prerequisites: A grade of C or better in WST100 and permission of Instructor.	LAB 1.0 1.0 0.0
WST282AB	Volunteerism for Women's Studies: A Service Learning Experience	Service learning field experience within private/public agencies and citizen volunteer groups. Students will develop writing skills, analysis, and synthesis in an on-site volunteer experience.	Prerequisites: A grade of C or better in WST100 and permission of Instructor.	LAB 2.0 2.0 0.0
WST282AC	Volunteerism for Women's Studies: A Service Learning Experience	Service learning field experience within private/public agencies and citizen volunteer groups. Students will develop writing skills, analysis, and synthesis in an on-site volunteer experience.	Prerequisites: A grade of C or better in WST100 and permission of Instructor.	LAB 3.0 3.0 0.0
WST284	19th Century Women Writers	Investigates major themes in literature by women writing in the 19th century including the nature of women's lives in the family, in work situations, and in society. Poetry, prose, essays and drama are examined with an emphasis on common themes	Prerequisites: None.	LEC 3.0 3.0 3.0

WST285	Contemporary Women Writers	Explores twentieth century literature (short stories, essays, plays, and poetry) written by women and about women. Focus on themes relevant to women's lives regardless of age, creed, or ethnic background	Prerequisites: None.	LEC 3.0 3.0 3.0
WST286	Women and Health: Body/Mind/Spirit/Connection	Economic, sociopolitical, and demographic factors affecting women's health. Methods for optimizing physical, emotional, and spiritual health. Specific health concerns of women throughout the lifespan. Activism for health promotion	Prerequisites: None.	LEC 3.0 3.0 3.0
WST290	Women and World Religions	Focus on the role of women in several organized religions and/or religious sects. Study of myth and symbols as they are used to establish, maintain, and enforce sex-roles within specific cultural contexts around the world.	Prerequisites: None.	LEC 3.0 3.0 3.0
WST292	Goddess Religions	Introduction to Goddess religions from pre-historic to modern times. Focuses on ancient origins, myths and practices of religions with female deities, their historical replacement by male religious deities, and their modern re-emergence in neo-Goddess movements.	Prerequisites: None.	LEC 3.0 3.0 3.0
WST298AA	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 1.0 1.0 0.0

WST298AB	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 2.0 2.0 0.0
WST298AC	Special Projects	Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development.	Permission of Program Director or Instructor.	LAB 3.0 3.0 0.0
WTO106AA	Introduction to SMAW	Introduction to arc welding with emphasis in Shielded Metal Arc Welding (SMAW). Designed to provide the knowledge and skills needed to cut and prepare weld joints utilizing current technology. Develops hands-on skills through sequenced lab experiences.	Prerequisites: None.	141
WTO106AB	SMAW 6010 Plate	Continued training in shielded metal arc welding with emphasis on using E6010 (fast-freeze) electrodes in all joint positions. Focus is on fillet welds for structural steel and open root groove weld joints.	Prerequisites: A grade of C or better in WTO106AA or permission of Instructor.	141

WTO106AC	SMAW 7018 Plate	Continued training in shielded metal arc welding with emphasis on using E7018 (low hydrogen) electrodes in all joint positions. Focus is on fillet welds and groove weld joints with backing to prepare students for welding code certification testing.	Prerequisites: A grade of C or better in WTO106AA or permission of Instructor.	141
WTO106AD	SMAW Introduction to Pipe	Advanced training in shielded metal arc welding with emphasis on pipe welding using E6010 and E7018 electrodes in various pipe joint positions (1G, 2G, 5G, 6G). Focus is on the open root groove pipe weld joints to prepare students for industry code certification.	Prerequisites: A grade of C or better in WTO106AA or permission of Instructor.	141
WTO111	Introduction to Welding	Learn basic safety procedures and equipment, while using fuel and electric cutting processes for the preparation of base materials for welding operations.	Prerequisites: None.	60
WTO112	Basic Welding (SMAW)	Examines codes used in welding and testing procedures, welding equipment setup, preparation, and striking an arc in the shielded metal arc welding (SMAW) process, while also learning the different types of filler materials and their proper storage.	Prerequisites: None.	120
WTO113	Welding Techniques (SMAW)	Explore the importance of devices used to align, fit-up and prepare joints for welding, while introducing open-groove weld techniques for in-position and out-of-position applications using the shielded metal arc welding (SMAW) process.	Prerequisites: None.	94
WTO114	Qualification Welds (SMAW)	Learn a procedure or specification to perform out-of-position welds to meet and qualify to a code or standard with focus on vertical and overhead welding using the shielded metal arc welding (SMAW) process.	Prerequisites: None.	124

WTO121	Welding (GMAW)	Identify and learn how to read welding detail drawings with welding symbols, using notes and bill of materials. Train in safety procedures, general equipment, filler materials and shielding gases used and how to make fillet and groove welds in various positions for gas metal arc welding (GMAW).	Prerequisites: None.	140
WTO122	Welding (FCAW)	Explore characteristics, properties, composition and classification of common ferrous and nonferrous metals along with preheating and post-heating procedures used for weld quality. Train in safety procedures, general equipment, filler materials and shielding gases used and how to make fillet and groove welds in various positions for flux-cored arc welding (FCAW).	Prerequisites: None.	116
WTO123	Welding (GTAW) Carbon Steel	Learn welding equipment setup, safety and the different use of filler materials and shielding gases. Perform demonstrated welding techniques with fillet and groove welds in various positions on carbon steel, using gas tungsten arc welding (GTAW).	Prerequisites: None.	70
WTO131	Weld Techniques Pipe (SMAW)	Learn welding equipment setup and safety practices for welding pipe with an electric arc welding process, using open-root groove welds. Gain knowledge on procedures for the preparation of open-root V-groove welds in various positions on carbon steel pipe using the shielded metal arc welding (SMAW) process.	Prerequisites: None.	150



WTO133	Weld Techniques Pipe (GTAW)	Learn welding equipment setup and safety for welding pipe with a gas tungsten arc welding process, using open-root groove welds. Gain knowledge on procedures for the preparation of open-root V-groove welds in various positions on carbon steel pipe using the gas tungsten arc welding (GTAW) process.	Prerequisites: None.	176
WTO145	Carbon Steel (GTAW)	Learn welding equipment setup, safety, and the different uses of filler materials and shielding gases in the gas tungsten arc welding (GTAW) process. Perform advanced welding techniques with fillet and groove welds in various positions on carbon steel.	Prerequisites: None.	224
WTO146	Aluminum (GTAW)	Learn safety procedures, general equipment setup, filler materials and shielding gases used and how to make fillet and groove welds in various positions for the gas tungsten arc welding (GTAW) of aluminum. Gain an understanding of the properties and characteristics of aluminum and how to clean and prepare plate coupons for welding qualifications.	Prerequisites: None.	200
WTO147	Stainless Steel (GTAW)	Learn safety procedures, general equipment setup, filler materials and shielding gases used, and how to make fillet and groove welds in various positions for gas tungsten arc welding (GTAW) of stainless steel. Gain an understanding of the properties and characteristics of stainless steel and preparation of plate coupons for the qualification of welds.	Prerequisites: None.	200

WTO206AA	Introduction to GMAW/FCAW and GTAW	Instruction in theory and practice of gas metal arc welding (GMAW) and gas tungsten arc welding (GTAW), commonly referred to as MIG and TIG. Basic welding procedures on ferrous and nonferrous metals. Setup and operation of welding process equipment. Covers selection of proper filler materials and shielding gas options.	A grade of C or better required in all Prerequisites. Prerequisites or Corequisites: WTO106AA or permission of Instructor.	141
WTO206AB	Advanced GMAW and FCAW	Instruction and practice of gas metal arc welding (GMAW) and flux cored arc welding (FCAW) in the horizontal, vertical, and overhead positions. Prepare for industry code performance qualification plate tests with both welding processes.	Prerequisites: A grade of C or better in WTO206AA or permission of Instructor.	141
WTO206AC	Advanced GTAW Non-Ferrous	Instruction and practice of gas tungsten arc welding (GTAW) aluminum sheet in the flat, horizontal, and vertical positions. Prepare for industry code performance qualification tests in any welding position.	Prerequisites: A grade of C or better in WTO206AA or permission of Instructor.	141
WTO206AD	Advanced GTAW Ferrous	Instruction and practice of gas tungsten arc welding (GTAW) carbon and stainless-steel in any position. Prepare for industry code performance qualification tests in any welding position.	Prerequisites: A grade of C or better in WTO206AA or permission of Instructor.	141
WTO208AA	SMAW Code Welding	Advanced training in shielded metal arc welding (SMAW) to achieve successful welder performance qualification testing in any position. Focus is on single v-groove weld joints per industry codes and specification requirements.	Prerequisites: A grade of C or better in WTO106AA or permission of Instructor.	141
WTO208AB	GMAW Code Welding	Advanced training in gas metal arc welding (GMAW) with emphasis on achieving successful welder performance qualification testing in any position. Focus is on groove weld joints per industry codes.	Prerequisites: A grade of C or better in WTO206AA or permission of Instructor.	141

WTO208AC	FCAW Code Welding	Advanced training in flux cored arc welding (FCAW) with emphasis on achieving successful welder performance qualification testing in any position. Focus is on groove weld joints per industry codes.	Prerequisites: A grade of C or better in WTO206AA or permission of Instructor.	141
WTO208AD	SMAW Code Welding Pipe	Advanced training in pipe welding using either shielded metal arc welding (SMAW), gas metal arc welding (GMAW), or flux cored arc welding (FCAW) with emphasis on achieving successful welder performance qualification testing in any position. Focus is on groove weld joints per industry codes.	Prerequisites: A grade of C or better in WTO106AD or WTO208AA or permission of Instructor.	141
WTO208AE	GTAW Code Welding	Advanced training in welding using gas tungsten arc welding (GTAW) with emphasis on achieving successful welder performance qualification testing in any position. Focus is on groove weld joints per industry codes.	Prerequisites: None.	141
YAQ100	Yaqui Indian History and Culture	Surveys Yaqui Indian history and culture from pre-contact to the present. Explores themes of resistance, dispersion, survival, tradition, family, community, belief systems, and identity. Places Yaqui history within the context of Arizona, American Indian, Mexican, and Mexican-American History. Examines historical writing and analysis, life histories, poetry, language, and emphasis on Yaqui experiences in 20th century Arizona.	Prerequisites: None.	LEC 3.0 3.0 3.0
YAQ110	Yaqui Language and Culture	Introduction to the Yaqui language and overview of the traditional culture as a background for language use. Instruction in the grammar and writing system to assist student in speaking, reading, and writing Yaqui	Prerequisites: None.	LEC 3.0 3.0 3.0