



MAT150 College Algebra
Fall 2009
Section 56661, 10:30-12:35AM, M/W CM472

Instructor: Dr. Ted Coe
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Office Hours: 9:30-10:30 MW, 9:15-10:15 TR, 10:30-11:30 F (Tutor Center)

Textbook: *Functions Modeling Change: A Preparation for Calculus, 3rd edition.* Connally, Hughes-Hallett, Gleason, et al. Wiley Publishers 2007.

Course Description: Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, modeling and solving real world problems. Additional topics may include matrices, combinatorics, sequences and series, and conics. Prerequisites: Grade of "C" or better in MAT120, or MAT121, or MAT122 or equivalent, or satisfactory score on District placement exam.

Note: *This section is a College Algebra course for students majoring in BUSINESS, PSYCHOLOGY or other SOCIAL or LIFE SCIENCES. It is also designed for those students whose last math course is College Algebra.*

Course Competencies:

1. Analyze and interpret the behavior of functions, including end behavior, increasing and decreasing, extrema, asymptotic behavior, and symmetry.
2. Solve polynomial, rational, exponential, and logarithmic equations analytically and graphically.
3. Find real and complex zeros of polynomial functions analytically and graphically.
4. Graph polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions.
5. Determine domain and range of polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions.
6. Use transformations to graph functions.
7. Perform operations, including compositions, on functions and state the domain of the resulting function
8. Determine whether a relation is a function when represented numerically, analytically, or graphically.
9. Determine whether a function is one-to-one when represented numerically, analytically, or graphically.

10. Determine the inverse of a relation when represented numerically, analytically, or graphically.
11. Classify functions by name when represented numerically, analytically, or graphically.
12. Determine regression models from data using appropriate technology and interpret results.
13. Read and interpret quantitative information when presented numerically, analytically, or graphically.
14. Justify and interpret solutions to application problems.
15. Compare alternative solution strategies.
16. Calculate and interpret average rate of change.
17. Model and solve real world problems.
18. Solve systems of three linear equations in three variables.
19. Solve systems of linear inequalities.
20. Communicate process and results in written and verbal formats.

Attendance: I expect you to be in class every day it is scheduled. You may be withdrawn after two absences. If you have a legitimate need to leave class early, please notify me before class begins. If you have no absences *and* you have completed *all* homework you will be able to drop your lowest test score.

Grading: The semester grade is based on the number of points earned on chapter tests (100 points each), quizzes (varying points), hand-in assignments (1 point per section), and the final exam (150 points). Each student's final average is calculated by dividing the total number of points earned by the total points possible. Final semester grades are assigned as follows:

<u>Percentage of Total Points</u>	<u>Semester Grade</u>
$90 \leq x < 100$	A
$80 \leq x < 90$	B
$70 \leq x < 80$	C
$60 \leq x < 70$	D
$0 \leq x < 60$	F

Final Exam: The final exam is required. Any student who does not take the final exam will automatically receive an "F" grade in the course. The final exam date and time is shown on the attached calendar.

Tests: No late exams (or quizzes) will be accepted. If you must be absent on an exam date it is necessary to make arrangements with me prior to the absence.

Homework: Homework will not be collected on a daily basis, but you will be required to maintain a notebook of the homework assignments. These notebooks will be collected on exam days and will be counted towards your overall course grade.

Hand-In Assignments: I may periodically assign problems or projects which will count towards your overall grade. It is important that you attend class so that you don't miss handouts or announcements about these hand-in assignments.

Graphing Calculator: A graphing calculator is required for the course. The suggested calculators are the TI-83 or TI-84 models. Calculators with QWERTY keyboards, or those which have symbolic algebra capability, such as the TI-89 or TI-92, cannot be used during a quiz or test.

Tutoring: Drop-in tutoring is available for you in the Math/Science Center (480-423-6145) located in CM 441A. It is expected that you will come for help on a regular basis. Tutoring is free and no appointment is necessary.

Special Considerations: Please let me know right away if you have any kind of documented disability so that I can be aware of and accommodate special needs you may have. Students who have special needs should also contact the Disability Resources and Services Office at 480-423-6517.

To establish a positive learning environment for this class:

As an instructor, I am expected to be professional, courteous, respectful, and empathetic to students – and to

- Begin and end class on time,
- Be prepared for each class session,
- Provide academic feedback and grade assignments in a timely manner,
- Be available for individual consultation, and
- Clarify assignments and inform students of any adjustments to the class schedule.

As a student, you are expected to be reflective, courteous, respectful, and empathetic to classmates, instructor, and other College staff assisting you in your learning – and to

- Be in class and be on time,
- Be prepared for class sessions,
- Participate in class activities,
- Follow instructions and complete assignments,
- Keep up with and turn in assignments by the due dates,
- Put forth your best effort,
- Ask questions when you don't understand,
- Maintain knowledge of your grade status,
- Contact instructor right away about concerns or situations that interfere with your success in the class, and
- Comply with policies found in College catalog and student handbook.

Disclaimer: The instructor reserves the right to modify this syllabus to better meet the needs of the students.

MAT150 Proposed Calendar – Coe - Fall 2009

August 24 1.1, 1.2, 1.3	26 1.3, 1.4
August 31 1.5, 1.6	2 (Calculator Day) linear ineq, systems, 2.1
September 7 Holiday	9 Exam 1
September 14 2.2, 2.3,	16 2.4, 2.5,
September 21 2.6, 3.1,	23 3.2, 3.3
September 28 3.4, Review	30 Exam 2
October 5 3.5, 4.1	7 4.2
October 12 4.3	14 Review
October 19 Exam 3, 5.1	21 5.2, 5.3, 5.4
October 26 5.5, 8.1	28 8.2, 8.3
November 2 9.1, 9.2	4 Quiz, 9.3
November 9 9.4, 9.5	11 Veteran's Day
November 16 9.7, Review	18 Exam 4
November 23 Complex zeros (7.6)	25 Thanksgiving
November 30 11.1 / 11.2	2 11.2 / review
December 7 Quiz, Review	9 Review for final exam
December 14	December 16 FINAL 9:30-11:20AM