

College Algebra

Time: TR 8 – 9:15

Room: ACR 204

Instructor: Eric Funasaki

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Office hours:

MWF 9 – 9:50, TR 9:30 – 10:50, F 11 – 11:50, or by appointment.

Textbook:

College Algebra: A Concise Approach by Paul Sisson.

ISBN: 978-1-941552-77-3 Courseware and eBook

978-1-941552-49-0 Courseware, eBook, and Textbook

Course Description:

In-depth study and applications of polynomial, rational, radical, exponential, and logarithmic functions and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be added.

Course Objectives:

The student will be able to:

1. Identify and work with functions and their graphs;
2. Find the zeros of polynomial functions;
3. Recognize and manipulate exponential and logarithmic functions;
4. Solve systems of linear equations; and
5. Use matrices and vectors in simple problems.

Mathematics Program Learning Objectives:

The student should be able to:

1. Apply knowledge of basic mathematics principles;
2. Identify and provide valid proofs or solutions for theorems or problems; and
3. Recognize and dispute invalid mathematical statements using counterexamples.

EC-6 Core Teacher Competencies:

1. Competency 013 (Mathematics Instruction): The teacher understands how students learn mathematical skills and uses that knowledge to plan, organize, and implement instruction and assess learning.

2. Competency 014 (Number Concepts and Operation): The teacher understands concepts related to numbers, operations and algorithms, and the properties of numbers.
3. Competency 015 (Patterns and Algebra): The teacher understands concepts related to patterns, relations, functions, and algebraic reasoning.
4. Competency 016 (Geometry and Measurement): The teacher understands concepts related to principles of geometry and measurement.
5. Competency 017 (Probability and Statistics): The teacher understands concepts related to probability and statistics and their applications.
6. Competency 018 (Mathematical Processes): The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems, and make mathematical connections within and outside of mathematics.

Course Assessment:

Your grade will be based on the following components:

- 10% In-class problems and participation
- 24% Homework assignments and quizzes
- 66% Exams

The grading scale will be:

90 – 100 A 80 – 89 B 70 – 79 C 60 – 69 D 0 – 59 F

Course Schedule (tentative):

Week 1

- 8/27 T 1.1 The Real Number System. 1.6 The Complex Number System
- 8/29 R 2.1 Linear Equations in One Variable, 2.3 Quadratic Equations in One Variable

Week 2

- 9/3 T 2.3 Quadratic Equations in One Variable
- 9/5 R 3.1 The Cartesian Coordinate System, 3.2 Linear Equations in Two Variables

Week 3

- 9/10 T 3.2 Linear Equations in Two Variables, 3.3 Forms of Linear Equations
- 9/12 R 4.1 Relations and Functions

Week 4

- 9/17 T 4.2 Linear and Quadratic Functions
- 9/19 R Review for Exam 1

Week 5

- 9/24 T **Exam 1**
- 9/26 R 5.1 Introduction to Polynomial Equations and Graphs,
5.2 Polynomial Division and the Division Algorithm

Week 6

- 10/1 T 5.2 Polynomial Division and the Division Algorithm
- 10/3 R 5.3 Locating Real Zeros of Polynomials

Week 7

- 10/8 T 5.3 Locating Real Zeros of Polynomials
10/10 R 5.4 The Fundamental Theorem of Algebra

Week 8

- 10/15 T 5.4 The Fundamental Theorem of Algebra
10/17 R Review for Exam 2

Week 9

- 10/22 T **Exam 2**
10/24 R 4.6 Combining Functions, 4.6 Inverses of Functions,
7.1 Exponential Functions and Their Graphs

Week 10

- 10/29 T 7.1 Exponential Functions and Their Graphs,
7.3 Logarithmic Functions and Their Graphs
10/31 R 7.3 Logarithmic Functions and Their Graphs,
7.4 Properties and Applications of Logarithms

Week 11

- 11/5 T 7.4 Properties and Applications of Logarithms
11/7 R 7.5 Exponential and Logarithmic Equations

Week 12

- 11/12 T 7.5 Exponential and Logarithmic Equations
11/14 R Review for Exam 3

Week 13

- 11/19 T **Exam 3**
11/21 R 7.2 Applications of Exponential Functions,
7.4 Properties and Applications of Logarithms,
8.1 Solving Systems by Substitution and Elimination

Week 14

- 11/26 T 8.2 Matrix Notation and Gaussian Elimination
11/28 R Thanksgiving (no class)

Week 15

- 12/3 T Review for Final Exam
12/5 R Dead Day (no class)

Week 16

- 12/11 W **Final Exam (8 am – 10 am)**

Attendance Policy:

Role will be taken. You are responsible for all material covered in class as well as any assignments and announcements that are made. If you miss an assignment, exam, or quiz you will receive a grade of zero unless I have been notified in advance.

Sul Ross State University policy allows an instructor to drop a student with a grade of W or F when 9 hours of class are missed. For this course that is when you miss **6** classes.

Cheating:

Cheating will not be tolerated. Anyone caught cheating will receive a grade of zero on that assignment. This includes homework assignments where the student who copied another student's work and the student who allowed their work to be copied will both receive a grade of zero.

Cell Phones and Other Electronic Devices:

Your cell phone must be **off** while you are in class. You may not read or send text messages while class is in session. If there is an unusual situation where you simply must be able to read and send a message without delay, place your phone in vibrate mode and leave the room before reading and responding. No other electronic devices may be used during class without the permission on the instructor.

ADA Statement:

Sul Ross State University is committed to equal access in compliance with the Americans With Disabilities Act of 1973. It is the student's responsibility to initiate a request for accessibility services. Students seeking accessibility services must contact Mary Schwartz, M.Ed., L.P.C., in Counseling and Accessibility Services, Ferguson Hall, Room 112. The mailing address is P.O. Box C-122, Sul Ross State University, Alpine, TX 79832. Telephone: 432-837-8691. E-mail: mschwartz@sulross.edu.

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