

Mathematics 3A, College Algebra – Spring 2022 Section # 53228

Instructor: Scott Endler

Class Times: MW 6:00pm - 7:50pm Room: CCI 201

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Required Text: College Algebra (Get MyLab Math), Physical textbook optional
13th Edition, Lial, Hornsby, Schneider, Daniels

Catalog Description: This is a college level course in algebra for majors in science, technology, engineering, and mathematics. Students will study polynomial, rational, radical, exponential, absolute value, and logarithmic functions systems of equations theory of polynomial equations analytic geometry.

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|-----------------|------|--------------------|-----------------------|----------|---|
| Grading: | 60% | Chapter Tests | Grading Scale: | 90-100% | A |
| | 15 % | Final Exam | | 80-89.9% | B |
| | 15% | Classwork/Homework | | 70-79.9% | C |
| | 10% | Quizzes | | 60-69.9% | D |
| | | | | <60% | F |

Chapter Tests: Chapter tests will be given during the term. These will mostly include material from the most recent chapter but may also include some previous material as well. There will be tests done online through MyLab and Mastering and paper and pencil tests completed within the time allowed during class. **There are no make-ups for missed quizzes or tests.**

Final Exam: The material in this course is used in many courses that follow in both math and science. Because of this, it is not acceptable to just forget everything once you take a chapter test. So, a comprehensive final exam will be given during final exam week.

Classwork/Homework: “Practice makes perfect” is particularly true in mathematics. Generally, assignments will be collected during class or at the beginning of the next class. Each assignment will be checked for completeness, neatness, and effort. Certain specific problems will be marked in depth. **Problems should be written out, all work must be shown, and answers boxed or underlined.** All assignments should have your name, the date, the assignment (chapter, section, and page number), and be in order.

Late Work and Make-up Assignments: Homework should be submitted on time. Being absent does not extend the due date for an assignment. Late homework may not be given full credit. Occasionally, optional make-up assignments may be given for extra credit homework points.

Required materials: Textbook, binder, 8.5” x 11” college ruled binder paper, pencils, scientific calculator, ruler, and graph paper.

Attendance and participation: Your effort matters. Coming to class, turning in assignments, taking quizzes and tests, participating in discussions is your way of demonstrating your participation and **attendance** in class.

A student will be dropped if the work assigned the first week is not attempted and completed within the first two weeks of class and the student has not made any contact with me. A student may be dropped even if contact has been made depending on the nature of that contact and how much work including the quiz the second week has not been completed. In particular, a student may be dropped even though they completed the quiz, but have not completed the homework assignments.

Additionally, a student may be dropped if two units (chapters) or more have not been completed, especially if those units are consecutive. Failing to complete these units will not only affect your overall grade and jeopardize your chance of passing this course, but may make completing later units especially challenging when those units build on earlier ones. This course has been intentionally broken into smaller chunks. Quizzes and tests will generally be on just one chapter at a time. This is to make the material easier to focus on and minimize the overall effect of a poor performance on one quiz or test.

Cheating and/or plagiarism: Cheating and/or plagiarism will not be tolerated. A student will receive no credit for the assignment, quiz, or test if in the opinion of the instructor the individual has cheated.

Accommodations for Students with Disabilities:

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

Expected behavior: Please turn off cell phones before the start of every class period. Do not use cell phones as calculators. No one appreciates the distractions! Anyone that is disrespectful or disruptive to other students or the instructor may be removed from class for the day, and it will be considered an absence, or may be dropped from the class if the behavior is extreme enough.

Important Dates:

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|--------------------|---------------------|---|
| Drop Date: | Friday, January 28 | Last day to drop this course to avoid a "W" in person |
| | Sunday, January 30 | Last day to drop this course to avoid a "W" on WebAdvisor |
| | Friday, February 11 | Last day to opt for Pass/No Pass |
| | Friday, March 11 | Last day to drop this course (letter grades assigned after this date) |
| Holiday: | Monday, January 17 | Martin Luther King Jr. Day Observed (no classes, campus closed) |
| | Friday, February 18 | Lincoln Day Observance (no classes, campus closed) |
| | Monday, February 21 | Washington Day Observance (no classes, campus closed) |
| | Th/Fri, April 11-14 | Spring Break (no classes, campus open) |
| | Friday, April 15 | Good Friday Observance (no classes, campus closed) |
| Final Exam: | Monday, May 16 | 6:00-7:50 pm |

Course Outline:

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|---------|---|--------------|--------------------------|
| Unit A: | Equations and Inequalities | Chapter 1 | (Tentative) Weeks 1-6 |
| Unit B: | Graphs and Functions | Chapter 2 | Weeks 4-8 |
| Unit C: | Polynomial and Rational Functions | Chapter 3 | Weeks 7-10 |
| Unit D: | Inverse, Exponential, and Logarithmic Functions | Chapter 4 | Weeks 9-12 |
| Unit E: | Systems and Matrices | Chapter 5 | Weeks 11-14 |
| Unit F: | Analytic Geometry | Chapter 6 | Weeks 13-18 |
| Unit G: | Further Topics in Algebra, Final Exam Review | Chapter 7 | Weeks 14-18 |
| | Final Review/Final | All Chapters | Weeks 17-18 |

Course Outcomes:

Upon completion of this course, students will be able to:

- 1 analyze properties of various types of functions.
- 2 synthesize results from the graphs and/or equations of functions.
- 3 solve various types of equations and inequalities
- 4 apply appropriate techniques to model real world applications.
- 5 use formulas to find sums of finite and infinite series.

Course Objectives:

In the process of completing this course, students will:

- 1 Use functions including linear, polynomial, rational, radical, exponential, absolute value, logarithmic: definitions, evaluation, domain and range graph and complete operations with integers, fractions, decimals, percent, and exponents; calculate basic statistics
- 2 solve problems using the inverses of functions and the algebra of functions.
- 3 graphs functions including asymptotic behavior, intercepts, and vertices.
- 4 make transformations of quadratic, absolute value, radical, rational, logarithmic, and exponential functions.
- 5 solve equations including rational, linear, polynomial, radical, exponential, absolute value, and logarithmic.
- 6 solve linear, nonlinear, and absolute value inequalities.
- 7 solve systems of equations and inequalities.
- 8 use and apply the characterization of the zeros of polynomials.
- 9 use and apply the properties and applications of Complex numbers.
- 10 manipulate and graph the properties of conic sections.
- 11 generalize arithmetic and geometric sequences and find the k^{th} term of a binomial expansion.
- 12 Optional topic: Partial Fractions, Introduction to Limits, Polar Coordinates, and Introduction to Matrices