

MAT 151 College Algebra Syllabus
Coconino Community College
SEC XX, Fall 2020
4 credit hours
Online

Instructor:

Office hours:

Office:

Phone:

E-mail:

COURSE DESCRIPTION AND PREREQUISITE: College level algebra, including equations, functions, matrices, inequalities, sequences and series, and fundamental algebra theorems will be studied. Prerequisite: A grade of C or better in either MAT 097, or placement.

COURSE CONTENT:

1. functions: linear, quadratic, rational, exponential, logarithmic, polynomial, absolute value;
2. analysis of functions: graphing, combinations, composition, inverse, modeling;
3. equations and inequalities: systems, linear, quadratic, rational, exponential, logarithmic, radical, conics, polynomial, absolute value;
4. matrix operations;
5. complex numbers;
6. methods for finding roots of polynomials;
7. sequences and series;
8. and applications.

COURSE OUTCOMES:

Course Outcomes: Students will:

1. define functions and relations;
2. solve various systems of equations with several methods including matrices and determinants;
3. list and use the properties and operations of matrices;
4. graph equations and functions using various methods including technology;
5. solve linear, quadratic, rational, absolute value, polynomial, and radical equations;
6. utilize logarithmic and exponential properties to solve related equations;
7. identify features and general equations of the four types of conic sections;
8. identify arithmetic and geometric sequences;
9. calculate series;
10. simplify expressions involving complex numbers;
11. and solve application situations related to methods presented in this course.

COURSE GOALS:

To build student mastery of and confidence in the use of algebraic theorems, mathematical reasoning, and problem solving. In addition, students will be encouraged to develop a positive attitude towards mathematics by successfully completing course outcomes.

COURSE REQUIREMENTS:

- Textbook: *College Algebra*, 5th edition by Beecher, Penna, and Bittinger; Pearson; ISBN: 0-321-96957-X
- Access to CANVAS and ability to perform basic computer skills
- TI-84 Graphing Calculator available for free 90 day trial
<https://education.ti.com/en/downloads/trial-software?keyMatch=FREE%20TRIAL%20TI%2084&tisearch=Search-EN-everything>
- Desmos Graphing calculator available online for free at all times. www.desmos.com

GOAL (COURSE OUTCOMES)	COURSE CONTENT	ASSESSMENT
1) define functions and relations	Functions: linear, quadratic, rational, exponential, logarithmic, polynomial, absolute value	Homework, Quizzes, Exams
2) solve various systems of equations with several methods including matrices and determinants	Equations and inequalities: systems, linear, quadratic, rational, exponential, logarithmic, radical, conics, polynomial, absolute value Methods for finding roots of polynomials Matrix operations	Homework, Quizzes, Exams
3) list and use the properties and operations of matrices	Matrix operations	Homework, Quizzes, Exams
4) graph equations and functions using various methods including technology	Analysis of functions: graphing, combinations, composition, inverse, modeling Methods for finding roots of polynomials	Homework, Quizzes, Exams
5) solve linear, quadratic, rational, absolute value, polynomial, and radical equations.	Equations and inequalities: systems, linear, quadratic, rational, exponential, logarithmic, radical, conics, polynomial, absolute value Methods for finding roots of polynomials	Homework, Quizzes, Exams
6) utilize logarithmic and exponential properties to solve related equations	Equations and inequalities: systems, linear, quadratic, rational, exponential, logarithmic, radical, conics, polynomial, absolute value	Homework, Quizzes, Exams
7) identify features and general equations of the four types of conic sections.	Equations and inequalities: systems, linear, quadratic, rational, exponential, logarithmic, radical, conics, polynomial, absolute value	Homework, Quizzes, Exams
8) identify arithmetic and geometric sequences.	Sequences and series	Homework, Quizzes, Exams

9) calculate series	Sequences and series	Homework, Quizzes, Exams
10) simplify expressions involving complex numbers	Complex numbers	Homework, Quizzes, Exams
11) solve application situations related to methods presented in this course	Applications	Homework, Quizzes, Exams

COURSE POLICIES:

Academic Dishonesty Procedure: Academic dishonesty is a violation of the Student Code of Conduct as defined in Procedure 503-01. When a student commits or is suspected of committing an act of academic dishonesty, the instructor is responsible for determining the grade for the course or assignments. Incidents of academic dishonesty are reported to the Dean of Student development and Community Engagement for adjudication and follow up.

Attendance: Attendance will be taken in this class. If you fail to attend the first week of class, you will be counted as a “no-show,” and will be withdrawn from the class. Students will not receive refunds if they are dropped from a class. Financial Aid students who exceed the number of absences for a class may have their financial aid reduced or revoked causing a debt to be owed to CCC. Students may be suspended from receiving Financial Aid in future semesters for failure to attend classes at any point during the current semester. It is especially important that Financial Aid students attend all classes so that this does not happen. Regardless of whether or not you are a Financial Aid student, if you are going to be absent from a class, inform your instructor that you will be absent and follow the attendance requirements outlined in the syllabus in order to remain enrolled in the class. Important Dates: Deadline to drop a class without record for 100% refund is Friday, June 5th. Deadline to drop a class with a "W" grade instead of an "F" is Friday, July 23rd.

Late Work Policy: NO late work is accepted

Homework: All Homework is expected to be done online.

This is a 4 credit hour course, which during a regular semester equates to 4 hours in class and 8 hours outside of class when taken in person. Schedule adequate time to complete requirements.

24-Hour Rule: If you do your homework within 24 hours of the lesson you will retain 80% of the knowledge (vs only 30%)!

Quizzes: There will be periodic quizzes that will pertain to the homework and are intended to promote mastery and rigor.

Exams: Three exams, 10% each, and one midterm exam, 20%, will be given. The midterm exam, like the final, will be given in person. You are given the exam dates so plan on being able to take the exam on the date expected. If you must miss an exam time (for example, very sick) make sure to contact your instructor BEFORE the test time and date to arrange a new test time. The exam will need to be made up before the next zoom class if possible. You will need to send me an email before class. You must show ALL appropriate work on exams in order to receive any credit. **There will be a 10% penalty on any exam taken after the exam date.** You are only allowed to take one exam late. If you try to take another exam late you will take a zero grade on that exam. The midterm will

be taken in person at the college. Precautions will be taken to make sure everyone is safe.

Final Exam: A Comprehensive Final Exam will be given in person at the college.

Precautions will be taken to make sure everyone is safe.

There is NO make up of the final exam.

COURSE EVALUATION AND GRADING SCALE

Grading Procedure:		Grading Scale:	
Exams	45%	90% to 100%	A
Discussions	5%	80% to 89.9%	B
Homework	20%	70% to 79.9%	C
Quizzes	10%	60% to 69.9%	D
<u>Final Exam</u>	<u>20%</u>	0 to 59.9%	F
Total	100%		

EXTRA CREDIT:

Course Schedule (10 WEEK ONLINE):

(Please note that this is a tentative schedule and is subject to change)

Week	Content and assignments
1	Ch 1: Graphing, Linear Functions, Zeros and Applications Attend one Zoom meeting during the first week Respond to Discussion Question and replies Watch Videos for Chapter 1, Sections 1 – 6 Complete homework assignments in the Chapter 1 Module Quiz Chapter 1
2	Ch 2: Piecewise functions, Operations and Composition of Functions and Transformations Attend zoom office hours or contact your instructor if you encounter problems Respond to Discussion Question and replies Watch Videos for Chapter 2, Sections 1, 2, 3, and 5 Complete homework assignments in the Chapter 2 Module Exam 1: Ch 1 and 2
3	Ch 3: Complex Numbers, Quadratic Functions, Rational and Radical Equations and Inequalities Attend zoom office hours or contact your instructor if you encounter problems Respond to Discussion Question and replies Watch Videos for Chapter 3, Sections 1 - 5 Complete homework assignments in the Chapter 3 Module Quiz Ch 3
4	Ch 4: Polynomial Functions, Graphing, Division and Zeros Attend zoom office hours or contact your instructor if you encounter problems Respond to Discussion Question and replies Watch Videos for Chapter 4, Sections 1 - 4 Complete homework assignments in the Chapter 4 Module Quiz Ch 4

5	<p>Ch 4: Polynomial Rational Functions and Inequalities</p> <p>Attend zoom office hours or contact your instructor if you encounter problems</p> <p>Watch Videos for Chapter 4, Sections 5 - 6</p> <p>Complete homework assignments in the Chapter 4 Module</p> <p>Midterm covering Chapters 1 - 4</p>
6	<p>Ch 5: Inverse, Exponential, and Logarithmic functions</p> <p>Attend zoom office hours or contact your instructor if you encounter problems</p> <p>Respond to Discussion Question and replies</p> <p>Watch Videos for Chapter 5, Sections 1 - 6</p> <p>Complete homework assignments in the Chapter 5 Module</p> <p>Quiz Ch 5</p>
7	<p>Ch 6: Systems of Equations and Matricies</p> <p>Attend zoom office hours or contact your instructor if you encounter problems</p> <p>Respond to Discussion Question and replies</p> <p>Watch Videos for Chapter 6, Sections 1 - 6</p> <p>Complete homework assignments in the Chapter 6 Module</p>
8	<p>Exam 2: Ch 5 and 6</p> <p>Ch 7: Conic Sections</p> <p>Attend zoom office hours or contact your instructor if you encounter problems</p> <p>Respond to Discussion Question and replies</p> <p>Watch Videos for Chapter 7, Sections 1 – 3</p> <p>Complete homework assignments in the Chapter 7 Module</p> <p>Quiz Ch 7</p>
9	<p>Ch 8: Series and Sequences</p> <p>Attend zoom office hours or contact your instructor if you encounter problems</p> <p>Respond to Discussion Question and replies</p> <p>Watch Videos for Chapter 8, Sections 1 – 3</p> <p>Complete homework assignments in the Chapter 8 Module</p> <p>Exam 3: Ch 7 and 8</p> <p>Review for Final</p>
10	<p>Attend zoom office hours or contact your instructor if you encounter problems</p> <p>Review and Final</p>