



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	MATH
Course Number:	130
Descriptive Title:	College Algebra
Division:	Mathematical Sciences
Department:	Mathematics
Course Disciplines:	Mathematics
Catalog Description:	In this course, students will explore polynomial, radical, rational, exponential, and logarithmic functions and their graphs, as well as sequences and series. Note: This is a preparatory course for Calculus I for the Biological, Management, and Social Sciences In this course, students will explore polynomial, radical, rational, exponential, and logarithmic functions and their graphs, as well as sequences and series. Note: This is a preparatory course for <u>MATH 165 - Calculus for Business and Social Sciences</u>.
Prerequisite:	Proficient in intermediate algebra
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	3
Hours Laboratory (per week):	0
Outside Study Hours:	6
Total Course Hours:	54
Course Units:	3
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	fall 1995
Transfer UC:	Yes
Effective Date:	fall 1995

General Education: ECC	Area 4B - Language and Rationality: Communication and Analytical Thinking
Term:	
Other:	
CSU GE:	Area B4 - Physical Universe and its Life Forms: Mathematics/Quantitative Reasoning
Term:	
Other:	
IGETC:	Area 2A - Mathematical Concepts and Quantitative Reasoning
Term:	
Other:	
CalGETC:	
Term:	
Other:	
Student Learning Outcomes:	SLO #1 Solve Nonlinear Inequalities Solve nonlinear inequalities and a variety of equations such as: polynomial, rational, radical, exponential, and logarithmic. SLO #2 Solve Problems using Graphical Methods Solve problems using graphical methods involving a variety of functions, such as: polynomial, rational, radical, exponential, and logarithmic. SLO #3 Solve Problems Using Sequences and Series Solve problems using sequences and series. SLO #4 Solve Application Problems Solve college algebra level application problems and use technology.
Course Objectives:	1. Solve polynomial, rational, radical, exponential, and logarithmic equations, and solve formulas for a variable. 2. Solve linear and nonlinear inequalities. 3. Determine the domain, range, and graph (with transformations) of the following: polynomial, rational, exponential and logarithmic functions. 4. Determine the composition of functions and the inverse of one-to-one functions. 5. Solve problems involving arithmetic and geometric sequences and series. 6. Analyze the graph of a function and determine the domain, range, extrema, and average rate of change.

	7. Solve college level application problems from the mathematics of finance including compound interest, present value, and annuity. 8. Solve problems using a scientific (or graphing) calculator and/or computer algebra systems.
Major Topics:	I. POLYNOMIALS AND RATIONAL EXPRESSIONS (6 hours, lecture) A. Polynomials B. Radical and rational expressions C. Integer and rational exponent expressions D. Factoring of expressions with rational exponents, rationalizing of numerators, and simplifying the difference quotient II. EQUATIONS AND INEQUALITIES (9 hours, lecture) A. Quadratic, rational, and radical equations, and equations with rational exponents, and applications B. Linear and nonlinear (polynomial and rational) inequalities in one variable C. Solving formulas for a specified variable III. FUNCTIONS AND GRAPHS (12 hours, lecture) A. Inverse functions and the composition of functions B. Graphs of relations, functions, and piecewise defined functions C. Transformations and symmetry of graphs of functions D. Find domain, range and extrema from analyzing graphs of functions E. Average rate of change of a function IV. POLYNOMIAL AND RATIONAL FUNCTIONS (6 hours, lecture) A. Quadratic Functions and their Graphs B. Higher Degree Polynomial Functions and their Graphs C. Rational Functions and their Graphs V. EXPONENTIAL AND LOGARITHMIC FUNCTIONS (12 hours, lecture) A. Graphs of exponential and logarithmic functions B. Exponential and logarithmic equations C. Application problems involving exponential and logarithmic functions VI. SEQUENCES AND SERIES (6 hours, lecture) A. Arithmetic sequences and series and their applications B. Geometric sequences and series and their applications VII. THE MATHEMATICS OF FINANCE (3 hours, lecture) A. Amount of an annuity

	B. Present value of an annuity C. Installment payments on a loan
Total Lecture Hours:	54
Total Laboratory Hours:	0
Total Hours:	54
A.1. Primary Methods of Evaluation (Part 1 - CCN courses only):	
A.2. Primary Method of Evaluation (Part 2 - all courses; choose one):	2) Problem solving demonstrations (computational or non-computational)
Typical Assignment Using Primary Method of Evaluation:	For the rational function $h(x) = (9x - 12)/(9 - 3x)$, (a) Determine and clearly state all intercepts and asymptotes. (b) Use the information from (a) and any necessary points to sketch the graph. Show all work.
Critical Thinking Assignment 1:	Determine the half-life of a 350 mg sample of a radioactive element that decays to 300 mg in 36 hours. Round the final answer to two decimal places. Show all work.
Critical Thinking Assignment 2:	The purchase value of an office computer is \$12,500. Its annual depreciation is \$1875. Determine the value of the computer after 6 years.
Other Evaluation Methods:	Homework Problems, Objective Exam, Quizzes
Instructional Methods:	Lecture
If other:	
Work Outside of Class:	Answer questions, Problem solving activity, Required reading, Study
If Other:	
Up-To-Date Representative Texts:	Stewart, Redlin, and Watson. College Algebra. 8th ed. Cengage Learning, 2024
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	Graphing or scientific calculator
Requisite:	
Category:	
Requisite course(s): List both prerequisites and corequisites in this box.	

Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Marc Glucksman
Date:	12/09/1991
Original Board Approval Date:	
Last Reviewed and/or Revised by:	Benjamin Mitchell
Date:	10/28/2025
Last Board Approval Date:	1/21/2026
Effective Term:	FA 2026