



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	MATH
Course Number:	120S
Descriptive Title:	Liberal Arts Mathematics Support
Division:	Mathematical Sciences
Department:	Mathematics
Course Disciplines:	Mathematics
Catalog Description:	This is a support course for students concurrently enrolled in Math 120. Students will receive additional instruction in core skills and concepts needed in Nature of Mathematics. Topics as needed may include concepts from arithmetic, pre-algebra, elementary and intermediate algebra, and descriptive statistics that are needed to understand the basics of college-level Liberal Arts Math.
Prerequisite:	
Co-requisite:	Math-120
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	1
Hours Laboratory (per week):	0
Outside Study Hours:	2
Total Course Hours:	18
Course Units:	1
Grading Method:	Pass/No Pass only
Credit Status:	Credit, non degree applicable
Transfer CSU:	No
Effective Date:	
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	

	IGETC:	
	Term:	
	Other:	
	CalGETC:	
	Term:	
	Other:	
Student Learning Outcomes:	SLO #1 Solve Loan Problems Apply techniques of simple and compound interest to solve loan and annuity problems. SLO #2 Solve Application Problems Using Graphical Methods Solve application problems using graphical methods such as: 3-ring Venn diagrams, truth tables, Euclidean geometries. SLO #3 Analyze Voting System Analyze voting systems, methods of apportionment/representation to further the understanding of the political process. SLO #4 Solve Application Problems Solve application problems using basic counting principles, permutations, combinations, probability, expected value and frequency distributions.	
Course Objectives:	1. Convert between fractions, decimals, and percentages and understand the relative sizes of these values. 2. Evaluate expressions correctly using order of operations and evaluate formulas given values for all necessary variables. 3. Solve equations using algebraic methods, including linear and exponential equations. 4. Apply properties and laws of logarithms in solving compound interest problems. 5. Read and interpret a variety of tables, charts, and graphs including bar graphs and histograms. 6. Translate applied problems into mathematical statements and translate mathematical solutions into verbal conclusions.	
Major Topics:	I. FRACTIONS, PROPORTIONS AND PERCENTAGES (2 hours, lecture) A. Fractional Arithmetic and Simplifying Expressions with Fractions B. Converting between Fractions, Decimals, and Percentages C. Understanding Fractions as Proportions D. Comparing values on the real line, including decimals and negatives II. LINEAR EQUATIONS (2 hours, lecture) A. Solving Linear Equations B. Solving Formulas III. EVALUATING EXPRESSIONS (2 hours, lecture)	

	A. Order of Operations B. Evaluating Formulas IV. EXPONENTIAL EQUATIONS (3 hours, lecture) A. Properties of Exponents B. Basic Graphs of Exponential Functions C. Evaluating Exponential Functions D. Solving Exponential Equations V. LOGARITHMS (3 hours, lecture) A. Basic Properties of Logarithms B. Basic Graphs of Logarithms C. Power Law of Logarithm VI. CALCULATOR SKILLS (2 hours, lecture) A. Arithmetic on the Calculator B. Rounding C. Using Exponents and Logarithms on the Calculator VII. TABLES, CHARTS AND GRAPHS (2 hours, lecture) A. Reading and Interpreting Tables, Charts, and Graphs B. Plotting Coordinates VIII. APPLICATIONS (2 hours, lecture) A. Translating Verbal Statements into Numeric Expressions B. Estimating the Reasonableness of Results C. Stating Mathematical Conclusions Verbally
Total Lecture Hours:	18
Total Laboratory Hours:	0
Total Hours:	18
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:	Evaluate the following expression, rounding your answer to two decimal places, for the amount of a monthly payment on a \$25,000 loan at interest rate 4% for 8 years: $24000(0.0412)1-(1+0.0412)^{-12*8}$
Critical Thinking Assignment 1:	Suppose you have \$1500 to invest in an account paying 6% interest, compounded quarterly, and wish to have this investment grow to \$2000.

	(a) Write down the formula that can be used to solve for the number of years it will take for the investment to reach \$2000. (b) Write a sentence explaining what values should be used for the known variables in the formula from (a). (c) Based on (a) and (b), set up an equation to solve for the time for the investment to reach \$2000. (d) Using logarithms, solve the equation from (c) and write out the answer in sentence form.												
Critical Thinking Assignment 2:	Suppose you are studying the students in a math class. You classify the students according to gender and age bracket and get the following data:												
	<table><tr><td></td><td>18-21 years old</td><td>22-25 years old</td><td>25+ years old</td></tr><tr><td>Male</td><td>9</td><td>2</td><td>4</td></tr><tr><td>Female</td><td>7</td><td>5</td><td>6</td></tr></table>		18-21 years old	22-25 years old	25+ years old	Male	9	2	4	Female	7	5	6
		18-21 years old	22-25 years old	25+ years old									
	Male	9	2	4									
Female	7	5	6										
a. How many students were in this math class? b. What percent of the students in this math class were Female? (Round to the nearest tenth of a percent) c. What percent of the students in this math class were 22-25 years old? (Round to the nearest tenth of a percent) d. What percent of the Male students were 18-21 years old? (Round to the nearest tenth of a percent) e. What percent of the 25+ year old students were Female? (Round to the nearest tenth of a percent)													
Other Evaluation Methods:	Homework Problems, Objective Exam, Other Exams, Quizzes, Written Homework												
Instructional Methods:	Discussion, Group Activities, Lecture												
If other:													
Work Outside of Class:	Answer questions, Problem solving activity, Required reading, Skill practice, Study												
If Other:													
Up-To-Date Representative Texts:	Thomas Pirnot. Mathematics All Around. 7th ed. Pearson, 2022.												

	Dave Sobecki. Math in Our World. 5th ed. McGraw Hill Education, 2023.
	Allen Angel. A Survey of Mathematics with Applications. 11th ed. Pearson, 2021
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	
Requisite:	Corequisite
Category:	
Requisite course(s): List both prerequisites and corequisites in this box.	Math-120
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	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Matthew Mata

Date:	09/27/2019
Original Board Approval Date:	
Last Reviewed and/or Revised by:	Benjamin Mitchell
Date:	10/28/2025
Last Board Approval Date:	01/21/2026
Effective Term:	FA 2026