MATH G100: LIBERAL ARTS MATHEMATICS

Item	Value
Curriculum Committee Approval Date	05/07/2024
Top Code	170100 - Mathematics, General
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)
Local General Education (GE)	• Area 2 Mathematics (GB2)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 2A Math Concepts (2A)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 2A Math Concepts (2A)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B4 Math/Quant.Reasoning (B4)

Course Description

This course expands upon a student's current algebraic skill set offering liberal arts students an applications-oriented, problem-solving exploration into a variety of mathematical fields including geometry, statistics, algebra, and business mathematics. The course is designed not only to meet college general education requirements but to help generate a positive attitude toward, and an interest in, mathematics. PREREQUISITE: Course taught at the level of intermediate algebra or appropriate math placement. Transfer Credit: CSU; UC.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Calculate mean, median, and mode from a given set of data.
3. Use various formulas to solve financial problems related to house mortgages.
4. Use the U.S. customary and metric measurement systems to solve for the surface area of geometric figures.

Course Objectives

- 1. Use truth tables to verify symbolic statements.
- 2. Use various formulas to manage and plan for long-term financial goals.
- 3. Use the U.S. customary and metric measurement systems to analyze geometric figures.
- 4. Utilize various aspects of probability and statistics to solve problems relating to games of chance and other real-world applications.
- 5. Analyze and solve linear, quadratic, and exponential equations.

Lecture Content

Logic Simple and compound statements Negations, conjunctions, disjunctions, conditional, and biconditional statements Truth tables Consumer Mathematics Percents Simple and compound interest Installment buying and cost of home ownership Measurement Measuring length and the Metric System Measuring area and volume Measuring weight and temperature Exponents and scientific notation Geometry Points, lines, planes, and angles Triangles, circles, and other polygons Perimeter and circumference Area and volume Counting methods and probability The Fundamental Counting Principle Permutations and combinations Fundamentals of probability Events involving Not, And, and Or Statistics Sampling, frequency distributions, and graphs Measures of central tendency Measures of dispersion The normal distribution and its applications Algebra concepts Linear equations and inequalities Applications of linear equations and inequalities Rational and quadratic equations Graphs, functions, and systems Linear functions, graphs, and models Quadratic functions, graphs, and models Exponential and logarithmic functions, graphs, and models Systems of equations and inequalities

Lab Content

.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Reading Assignments

Text and instructor handouts.

Writing Assignments

Students will demonstrate problem solving skills when they write their own solutions to regular homework problems and assessment problems.

Out-of-class Assignments

Instructor assigned homework and projects.

Demonstration of Critical Thinking

Students will demonstrate critical thinking and problem-solving skills by using logic, in conjunction with past mathematical solving techniques, to solve and interpret a variety of applications not previously seen. Such applications range from computing compound interest in consumer mathematics, computing area and/or perimeter of geometrical objects, to calculating frequency distributions for statistical models. Demonstrations will be shown by completing assignments, participating in discussions, and completing required assessments.

Required Writing, Problem Solving, Skills Demonstration

Students will demonstrate problem solving skills when they write their own solutions to regular homework problems and assessment problems.

Eligible Disciplines

Mathematics: Master's degree in mathematics or applied mathematics OR bachelor's degree in either of the above AND master's degree in statistics, physics, or mathematics education OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Angel, Abbott Runde. A Survey of Mathematics with Applications, 11th ed. Pearson, 2021 Rationale: . 2. Required Miller, Charles. Mathematical Ideas, 15th ed. Pearson, 2023