MATH G100: LIBERAL ARTS MATHEMATICS

Item	Value
Curriculum Committee Approval Date	04/16/2019
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
Grading Policy	Standard Letter (S)
Local General Education (GE)	• GWC Mathematic Competency (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. Demonstrate an understanding of set theory and use truth tables to verify symbolic statements and analyze logical arguments.
- 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.

Lecture Content

Problem solving and critical thinking Inductive and deductive reasoning Problem solving and mathematical modeling Set Theory Basic concepts Venn diagrams and set operations Logic Simple and compound statements Negations, conjunctions, disjunctions, conditional, biconditional statements Truth Tables Equivalent statements and De Morgans Laws Arguments and Euler diagrams Numeration Systems (optional) Positional systems Number bases Computation in positional systems Number Theory and the Real Number System(optional) Prime and composite numbers Integers, rational, and irrational Numbers The real numbers and their properties 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 Conditional probability and odds (optional) Expected value (optional) Statistics Sampling, frequency distributions, and graphs Measures of central tendency Measures of dispersion The normal distribution and its applications

Lab Content

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Method(s) of Instruction

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

Reading Assignments

Text

Writing Assignments

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

Out-of-class Assignments

Projects may be required which would extend the students special interest in an area of study.

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. Demonstrations will be shown by completing assignments, participating in discussions, and completing required exams and quizzes.

Required Writing, Problem Solving, Skills Demonstration

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

Eligible Disciplines

Mathematics: Masters degree in mathematics or applied mathematics OR bachelors degree in either of the above AND masters degree in statistics, physics, or mathematics education OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Angel, Abbott Runde. A Survey of Mathematics with Applications, 10th ed. Pearson, 2017