Sophia Learning

MATH1010: Introductory Applied Math (1 semester credit)

COURSE DESCRIPTION

Altering a recipe, planning a road trip, getting the best deal when shopping, and financing college—what do all these things have in common? An understanding of numbers and how to use and interpret them. In the workplace, fields such as business, technology, and criminal justice all depend on math. In this course, you will learn how to apply mathematics in a way that will positively inform your world. Learn how to use straightforward approaches for fundamental math and algebra to create meaning and see the world in a new way.

COURSE EFFECTIVE DATES: June 2021 - Present

PREREQUISITES: No prerequisites

LENGTH OF COURSE: This is a self-paced course. Students may use as much or as little time as needed to complete the course.

ACE CREDIT® RECOMMENDATION: In the lower-division baccalaureate/associate degree category, 1 semester hours in liberal arts mathematics (5/21).

GRADING: This is a pass/fail course. Students are required to complete all 13 formative and 4 summative assessments with an overall course average of 70% or better.

LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

1. Solve basic arithmetic equations.
2. Simplify multi-step algebraic expressions.
3. Evaluate arithmetic expressions involving fractions and decimals.
4. Perform conversions between decimals, fractions, and percents to solve real-world problems.
5. Solve linear algebraic equations.
6. Solve linear inequality word problems.
7. Use the slope-intercept form to identify coordinates, slope, and lines on a graph.

8. Use the counting principle and probability to solve real-world problems.
9. Solve word problems using mean, median, and mode.
10. Examine graphs to identify values and determine possible data subjectivity.
11. Examine common paycheck questions such as gross versus net pay, deductions, and tax implications.
12. Use the power of simple and compound interest to determine the true cost/benefit of loans and investments.
13. Use geometric formulas to better understand sizes of common objects.

OUTLINE OF MAJOR CONTENT AREAS

- Real Numbers, Fractions, Decimals, and Integers
- Addition, Subtraction, Multiplication, and Division of Integers
- Exponents
- Order of Operations
- Combining Like Terms
- Distributive Property
- Translating Word Problems into Algebraic Expressions
- Addition, Subtraction, Multiplication, Division of Decimals
- Addition, Subtraction, Multiplication, Division of Fractions
- Ratios and Proportions
- Converting Fractions, Decimals, and Percents
- Multi-Step Linear Equations and Inequalities
- Translating Word Problems into Linear Inequalities
- Finding a Slope
- Determining X- and Y-Intercepts
- Counting Principle and Factorials
- Simple Probability
- Probability of Dependent and Independent Events
- Mean, Median, Mode, Range, and Outliers
- Reading a Graph
- Data Subjectivity
- Gross Pay and Net Pay After Deductions
- Simple and Compound Interest
- Pythagorean Theorem
- Area and Volume Formulas

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