

MAT 062 INTRO TO WORKPLACE MATHEMATICS (3 credit hours)

Official Course Description	Prepares students for Business Mathematics, Applied Mathematics, and Technical Mathematics. Includes properties of algebra, using formulas, solving linear equations, percentages, ratios, proportions, plotting points, graphing lines, exponents, and measurement. Encourages applications of algebra and effective use of technology.
Prerequisites	MAT 055 or equivalent as determined by KCTCS placement examination.
Delivery Mode	Online Only
Components	Lecture: 3.0 credits (45 contact hours)
Implementation	n/a
Attributes	Remedial - Mathematics
Advising Note	None

OFFICIAL COURSE COMPETENCIES/OBJECTIVES

Upon completion of this course, the student can:

1. Convert between units of measurement.
2. Use significant digits to show the accuracy and precision of a measurement.
3. Use and interpret scientific notation.
4. Simplify algebraic expressions using the properties of algebra, including the distributive law and combining like terms.
5. Solve linear equations in one variable.
6. Translate verbal statements into algebraic expressions.
7. Solve literal equations for a given variable.
8. Solve variation problems with percentages, ratios, and proportions.
9. Plot points on a rectangular coordinate system.
10. Graph lines from their equation.
11. Find the intercepts of a line from the graph or equation.
12. Calculate the slope of a line from the graph, equation, or two given points.
13. Interpret slope as a rate of change in applications.
14. Simplify algebraic expressions using the rules of exponents.
15. Use technology appropriately to solve application problems.
16. Solve applied problems using the above competencies within appropriate contexts.

OFFICIAL COURSE OUTLINE

- I. Studying Mathematics
 - A. Learning Styles
 - B. Study Skills
 - C. Test Taking
 - D. Real Number Arithmetic Skills
 - E. Effective Calculator Use
 - F. Calculation with Basic Geometric Formulas
- II. Measurement
 - A. Unit Conversion
 - B. Significant Digits
 - C. Scientific Notation
 - D. Accuracy and Precision of Measurements
- III. Formulas
 - A. Introduction to Formulas
 - B. Writing Formulas from Verbal Information
 - C. Formulas and Applications
- IV. Properties of Algebra
 - A. Basic Properties of Algebra
 - B. Simplifying Algebraic Expressions
 - C. Properties of Equality
- V. Equations
 - A. Interpreting Equations
 - B. Guidelines for Solving Equations
 - C. Solving Linear Equations
 - D. Solving Formulas for a Variable

VI. Ratios, Proportions, and Variation

- A. Ratios
- B. Proportions
- C. Percent
- D. Direct Variation
- E. Inverse Variation
- F. Joint Variation

VII. Graphing

- A. Plotting Points
- B. Graphing Lines
- C. Slope
- D. Rates of Change
- E. Intercepts of a Line

VIII. Exponents

- A. Algebraic Rules of Exponents
- B. Integer Exponents
- C. Simplifying Algebraic Expressions with Exponents