South Central College

MATH 0085 Intermediate Algebra

Course Outcome Summary

Course Information

Description	This course is function - based. It starts with a general overview of equations and inequalities. It then proceeds to cover linear functions, polynomial and rational functions, quadratic functions, equations involving radicals, and absolute values. Minnesota K-12 Academic Standards in Mathematics are indicated in parentheses after each competency on the Common Course Outline. (Prerequisite: Math 0075 with a score of C or better, or score 56 or above on the Accuplacer Arithmetic test.)
Total Credits	4
Total Hours	64

Types of Instruction

Instruction Type	Credits/Hours
Lecture	4/64

Pre/Corequisites

Math 0075 with a score of C or better, or score 56 or above on the Accuplacer Arithmetic test.

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. **Identify functions in graph and equation form. (9.2.1. - multiple areas)**

    Learning Objectives
    Identify the important features of functions.
    State the domain and range of a function.
    Graph linear and quadratic function.

2. **Evaluate functions for real numbers. (9.2.1.1)**

    Learning Objectives
    Use function notation correctly.
    Find the value of the function for a given point in the domain.

3. **Identify the characteristics of the linear function and use those to graph the function. (9.2.2. - multiple areas)**

   Learning Objectives
   Identify the slope (rate of change) of a linear function.
   Identify the x and y intercepts of the linear function.
   Draw conclusions from the graph of linear functions.

4. **Solve linear inequalities algebraically and graphically. (9.2.4. - multiple areas)**

   Learning Objectives
   Identify the slope and intercepts represented by the inequality.
   State the solution set for the inequality in algebraic and/or interval notation.
   Recognize the real world application of inequalities.

5. **Solve quadratic functions using appropriate factoring techniques and with the quadratic formula. (9.2.3.3 and 9.2.4.1)**

   Learning Objectives
   Use appropriate factoring techniques to solve quadratic functions.
   Correctly use the quadratic formula to solve quadratic functions.

6. **Apply mathematical techniques to real life problems. (9.2.4.1)**

   Learning Objectives
   Convert a situation to the appropriate relation and solve.
   Graph the situation described in a real world problem.

7. **Use formulas in to solve situational problems, including solving the formulas for different variables. (9.3.1.1)**

   Learning Objectives
   Apply formulas to situations and explain the conclusion.
   Solve formulas for given variables.

8. **Complete calculations in scientific notation and interpret the results as numbers in standard notation. (8.1.1.5 and 9.2.4.8)**

   Learning Objectives
   Interpret scientific notation in context.
   Perform calculation in scientific notation.
   Utilize calculators to complete calculations in scientific notation.

9. **Solve rational equations. (9.2.3.4 and (9.2.4.4)**

   Learning Objectives
   Solve linear equations with rational numbers as coefficients and constants.
   Combine rational expressions.
   Solve equations with rational expressions.

10. **Solve functions with radicals. (9.2.4.7)**

    Learning Objectives
    Use appropriate algebraic manipulation to solve equations involving radicals.
    Rewrite equations with radicals to equations with rational exponents.

11. **Solve systems of equation with two variables. (9.2.4.5)**

    Learning Objectives
    Solve two variable systems using addition.
    Solve two variable systems using substitution.
    Solve two variable systems using graphing.

12. **Evaluate and simplify exponential expressions. (9.2.4.1)**

    Learning Objectives

Simplify exponential expressions with positive and negative exponents.
Evaluate exponential expressions with positive and negative exponents.

13.   Use logarithms to solve exponential functions. (9.2.4. - multiple areas)

Learning Objectives
Convert exponential functions to logarithmic functions.
Apply logs to pH and similar real life settings.

SCC Accessibility Statement

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