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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