



South Central College

MATH 0075 Introductory Algebra

Course Outcome Summary

Course Information

Description	This course is designed to provide students with a review of basic fundamentals of algebra and mathematics. Topics include: algebraic expressions, functions, polynomials, exponents, solving and graphing linear equalities and inequalities, interpreting data in graphical form, factoring polynomials, simplifying rational expressions, and solving and simplifying radical and rational equations. Students needing foundational level improvement are highly encouraged to gain this first and/or concurrently with this course. Minnesota K-12 Academic Standards in Mathematics indicated in parenthesis after each competency on the Common Course Outline. (Prerequisites: None)
Total Credits	4
Total Hours	64

Types of Instruction

Instruction Type	Credits/Hours
Lecture	4/64

Pre/Corequisites

None

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. Review arithmetic operations involving expressions. (Below 9th grade.)

Learning Objectives

Use the order of operations simplifying expressions.
Determine the opposite and absolute values of numbers.
Perform prime factoring on integers.

2. Review arithmetic operations involving expressions. (Below 9th grade.)

Learning Objectives

Use the order of operations solving equations.
Solve real world equations using integers, decimals, percent and ratios.

3. Evaluate algebraic rational expressions. (9.2.3.4)

Learning Objectives

Generate equivalent algebraic expressions.
Add, subtract, multiply and divide rational expressions.
Use algebraic properties to evaluate expressions.

4. Evaluate algebraic rational equations. (9.2.3.4)

Learning Objectives

Generate equivalent algebraic equations.
Use algebraic properties to evaluate equations.
Use algebraic properties to solve rational equations.

5. Generate equivalent algebraic expressions involving polynomials. (9.2.3.2)

Learning Objectives

Simplify polynomial expressions.
Add, subtract, multiply and divide polynomials.

6. Use algebraic properties to evaluate expressions. (9.2.3.1)

Learning Objectives

Factor common monomial factors from polynomials.
Replace variables and evaluate expressions.
Determine exclusions to the domain.

7. Solve linear programming equations in two variables graphically. (9.2.4.5)

Learning Objectives

Represent real world linear equations by graphing.
Solve a system of linear equations by graphing.

8. Interpret graphical data from systems of equations in two variables. (9.2.4.5)

Learning Objectives

Identify intercepts.
Translate linear equations graphical representation into real world analysis.

9. Solve linear programming inequalities in two variables graphically. (9.2.4.4)

Learning Objectives

Represent real world linear inequalities by graphing.
Interpret real world linear inequalities from graphical representation.
Solve a system of linear inequalities by graphing.

10. Solve quadratic equations. (9.2.4.1)

Learning Objectives

Factor quadratic equations.
Interpret solutions for quadratic equations to real world applications.
Use the quadratic formula to find solutions to quadratic equations.

11. Apply problem solving techniques to real world and mathematical functions. (9.2.2.1)

Learning Objectives

Compute uniform motion values.
Determine investment future values.
Figure and interpret discount values.

12. Apply properties of geometric figures to solve real world and mathematical problems. (9.3.3. - multiple areas)

Learning Objectives

Use the Pythagorean Theorem and its converse to solve problems.

Use the properties of right triangles to solve problems and logically justify results.

SCC Accessibility Statement

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