

# MTH 111 - INTERMEDIATE ALGEBRA

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## Course Description

Intermediate Algebra covers elementary set notation, a description of the Real number system, its major subsets, and an introduction to the Complex number system. Simplifying exponents, and algebraic expressions. Solving linear, quadratic, rational, and radical equations. Linear inequalities and systems of equations are also solved. The function concept is referenced throughout including the graphical, symbolic and numerical representations. Group 2 course.

## Credit Hours

4

## Contact Hours

4

## Lecture Hours

4

## Required Prerequisites

A grade of 2.0 or better in MTH 23 or appropriate placement.

## Recommended Prerequisites or Skills

## Competencies

Placement into ENG 111

## Course Learning Outcomes

### Knowledge:

- Show proper usage of addition, subtraction, multiplication, division, and exponentiation on the Complex Numbers (primarily the Real Numbers), and algebraic expressions.
- Determine the proper usage of mathematical terminology and symbolization associated with: algebraic expressions (polynomial, rational and radical), functions, like terms, factoring, equations (linear, quadratic, radical and rational), linear inequality, simplify, solve, unit conversion, scientific notation, Cartesian coordinate system, slope, intercepts, parabola, vertex.
- Use procedures to: combine like terms, evaluate algebraic expressions and functions, perform operations and simplify rational and radical expressions, simplify integer and rational exponents, factor algebraic expressions, solve linear, quadratic, rational, radical equations, and systems of equations, convert units (Dimensional Analysis), solve linear inequalities, graph linear and quadratic equations.
- Use function notation to model and graph linear and quadratic functions.

### Application:

- Apply the appropriate procedure in simplifying mathematical expressions, solving equations and/or written applications.

### Integration:

- Apply mathematical operations/procedures to problems involving; evaluating and simplifying expressions or solving equations including applications.

### Human Dimension:

- Strive to improve areas of mathematical weakness based on feedback.
- Collaborate with peers during group work.

### Caring - Civic Learning:

- Recognize the impact mathematics plays in civic situations such as politics, education and income.

### Learning How to Learn:

- Relate mathematical skills to real-life situations.