MTH 121 - COLLEGE ALGEBRA

Course Description

This course covers algebra topics including functions, mathematical models, solving equations algebraically and graphically, polynomial functions, logarithmic functions, exponential functions, inverse functions, and linear and non-linear systems of equations. Applications are integrated throughout. Group 1 course.

Credit Hours

4

Contact Hours

4

Lecture Hours

4

Required Prerequisites

A grade of 2.0 or better in MTH 111 or higher (excluding MTH 120 and MTH 131) or appropriate placement.

Recommended Prerequisites or Skills Competencies

Placement into ENG 111

General Education Outcomes supported by this course

Quantitative Reasoning

Course Learning Outcomes

Knowledge:

- Show proper usage of addition, subtraction, multiplication, division, and exponentiation on the complex numbers (primarily the real numbers), and algebraic, logarithmic and exponential expressions.
- Determine the proper usage of mathematical terminology and symbolization associated with: algebraic expressions (polynomial, rational and radical), functions, inverse functions, composition of functions, factoring, equations (polynomial, radical and rational, exponential and logarithmic), inequalities (polynomial, rational and absolute value), graphing polynomial, rational, exponential and logarithmic functions, and transformations of the same.
- Use procedures to: evaluate and manipulate functions, perform operations and simplify algebraic expressions, simplify integer and rational exponents, factor algebraic expressions, solve polynomial, rational, radical, exponential, logarithmic, and systems of equations, solve polynomial and absolute value inequalities, graph polynomial, rational, exponential, and logarithmic functions and transformations of the same, and identify and locate key features of graphs of functions like; asymptotes, intercepts, and extrema.

Application:

- Appropriate procedure in simplifying algebraic expressions, solving equations, including systems of equations, and/or written applications.

Integration:

- Apply mathematical models to solve equations including applications.

- Interpret the solution in the context of the problem and justify the result.

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.