Math 126 College Algebra

Credit Hours: 3

Scheduled hours per week

Lecture: 4
Lab: 0
Other: 0

Catalog Course Description: Topics Include quadratic equations; quadratic type equations; radical equations; rational equations; linear, nonlinear, and absolute value inequalities; function concepts; graphing; linear functions and applications; polynomial functions; rational functions; exponential and logarithmic functions; Gaussian elimination of systems of equations; and matrix theory and determinates.

Pre-requisites: Students must score 23 or above on ACT or score 3 or above on the High School Summative Exam to enroll in this course.

Co-requisites: Students who score below 23 on ACT or score a 1 or 2 on the High School Summative Exam must take the co-requisite course Math 126E.

Course Learning Outcomes:

At the conclusion of Math 126, students should be able to:

1. Find all solutions to quadratic equations and equations quadratic in form.
2. Solve radical, absolute value, and rational equations.
3. Solve linear, nonlinear, and absolute value inequalities.
4. Analyze the addition, subtraction, multiplication, division, and/or composition of continuous functions, inverse functions, and piecewise defined functions via their equations, domains, ranges, and graphical representations.
5. Graph linear, quadratic, exponential, logarithmic, polynomial, and rational functions.
6. Apply quadratic function theory to real world problems.
7. Solve basic exponential and logarithmic equations.

Topics to be studied:

Linear Equations Quadratic
Equations
Complex Numbers/Quadratic equations in the Complex Number
System
Radical Equations/Equations in Quadratic Form/Factorable
Equations
Solving linear, compound, quadratic, rational, and absolute value
Inequalities
Equations Involving Absolute Value
Problem Solving: Interest, Mixture, Uniform Motion, and Constant Rate
Job Applications
The Distance and Midpoint Formulas

Graphs of Equations in Two Variables; Intercepts; Symmetry Circles
Variation
Functions
Graphs of a Functions Function
Operations Properties of
Functions
Library of Functions; Piecewise-defined Functions Graphing
Techniques: Transformations Mathematical Models:
Building Functions Quadratic Functions and Their
Properties
Quadratic Models; Building Quadratic Functions from Data
Polynomial Functions and Models
Properties of Rational Functions The
Graph of a Rational Function
Polynomial and Rational Inequalities
Exponential Functions
Logarithmic Functions Properties
of Logarithms
Logarithmic and Exponential Equations
Compound Interest
Building Exponential, Logarithmic, and Logistic Models from Data Systems
of Linear Equations: Substitution and Elimination Systems of Linear
Equations: Matrices
Systems of Linear Equations: Determinants Matrix
Algebra
Partial Fraction Decomposition

Relationship of Course to Program or Discipline Learning Outcomes:

(What program outcomes are being met by this course?
For general education courses, a listing of the general education competencies that are met.)

Relationship of Course to Mathematics (MATH) Student Learning Outcomes:	
Demonstrate understanding of the language of mathematics, by their use of symbols, definitions, word phrases, and representations.	x
Display proficiency in mathematical computations.	x
Implement mathematical techniques to solve applied problems.	x
Employ appropriate technology to demonstrate knowledge of mathematical concepts.	x
Exhibit mastery of core course competencies.	x
10/20/2017	

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	x
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
5/3/2016	

Special requirements of the course: None

Additional information: None

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Date: 10/20/2017