Master Syllabus

MAT 1470 - College Algebra

Division: Science, Mathematics and Engineering

Department: Mathematics

Credit Hour Total: 3.0   **Lecture Hrs:** 3.0

Prerequisite(s): MAT 0300

Other Prerequisite(s): AND Other with a grade of C or better or satisfactory score on math placement test

Date Revised: December 2015

Course Description:

Polynomial, radical, rational, exponential and logarithmic functions and their graphs; roots of polynomial functions, rational and polynomial inequalities; systems of linear and nonlinear equations; matrices; and applications. Traditional testing (proctored or in Testing Center) is used in all online sections. Note: Students who have not completed the required pre-requisite courses listed, but have successfully completed MAT 0200 with a grade of "C" or better, can register for MAT 1470 together with the co-requisite course MAT 0470, College Algebra Booster.

General Education Outcomes:

▫ Critical Thinking/Problem Solving Competency

Course Outcomes:

Graphs of Functions
Graph polynomial, exponential, rational, and logarithmic functions.

Assessment Method: Locally developed exams
Performance Criteria:

Passing grade with a score of 70% or better.

Characteristics of Functions
Determine the properties of functions.

Assessment Method: Locally developed exams
Performance Criteria:

Passing grade with a score of 70% or better.

Solving Equations
Solve algebraic equations and systems of equations.

Assessment Method: Locally developed exams
Performance Criteria:

Passing grade with a score of 70% or better.

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Performance Criteria:

Passing grade with a score of 70% or better.

Outline:

Represent functions verbally, numerically, graphically and algebraically, including linear, quadratic, polynomial, rational, root/radical/power, exponential, logarithmic and piecewise-defined functions.
Determine whether an algebraic relation or given graph represents a function.
Perform transformations of functions.Algebra of functions and composition of functions.
Analyze the algebraic structure and graph of a function to determine its properties.
Find inverses of functions and understand the relationship of the graph of a function to that of its inverse.
Use the Remainder and Factor Theorems for polynomial functions.
Use functions to model a variety of real-world applications.
Explain the relationship among the solutions of an equation, the zeros of the corresponding function, and the coordinates of the x-intercepts of the graph of that function.
Determine algebraically and graphically whether a graph exhibits symmetry.
Solve a variety of equations, including polynomial, rational, exponential, and logarithmic.
Solve a system of linear equations and their applications.
Solve polynomial and rational inequalities graphically and algebraically.
Perform elementary row operations with matrices, and use matrices to solve systems of linear equations.
Use the Rational Zeros Theorem and the Fundamental Theorem of Algebra to find the zeros of and factor a polynomial.
Solve a nonlinear system of equations graphically and algebraically, including systems arising in application problems.