Sinclair Community College
444 E. Third St.
Dayton, OH 45402

Master Syllabus

MAT 1280 - Technical Mathematics I

Division: Science, Mathematics and Engineering

Department: Mathematics

Credit Hour Total: 4.0 **Lecture Hrs:** 4.0

Prerequisite(s): MAT 0100

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

Date Revised: April 2017

Course Description:

Accuracy and precision with approximate numbers, geometry, functions, graphs, basic operations on polynomials, right-triangle trigonometry, systems of linear equations, factoring and quadratic equations. Scientific calculator required.

General Education Outcomes:

- Critical Thinking/Problem Solving

Course Outcomes:

Perform Operations
Demonstrate the ability to add, subtract, multiply and divide both polynomial and rational expressions.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better

Evaluate Formulas and Functions
Demonstrate the ability to evaluate formulas to solve problems in geometry and trigonometry. Evaluate functions and systems of linear equations both graphically and analytically.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better

Solving Equations and Application Problems
Demonstrate the ability to solve linear and quadratic equations and to solve problems involving linear and quadratic equations.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better

Graphing Functions
Demonstrate the ability to sketch the graphs of linear and quadratic functions.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better

Outline:

Approximate numbers, measurement error and significant digits
Scientific & engineering notation & unit conversion
Solve simple linear equations, formulas and literal equations
Basic operations on polynomials
Simplifying expressions involving exponents
Basic geometry of lines, angles, triangles, quadrilaterals, circles, rectangular solids, prisms, spheres, cylinders and cones
Ratios, proportions and variation
Introduction to functions including the algebra of functions & graphing
Linear functions including slope-intercept & point-slope forms
Solving quadratic equations and graphing quadratic functions
Solving systems of linear equations by graphing, substitution, addition/subtraction and using determinants
Factoring, equivalent fractions - solving equations involving rational expressions
Define the trigonometric functions and use them to solve right triangles
Integral and rational exponents