

SU DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SYLLABUS (*Tentative*)

MATH 140 *College Algebra and Trigonometry*

**Description:** An applications-oriented college algebra and trigonometry course for students planning to study science or additional mathematics. Emphasizes computational, qualitative, visual and symbolic approaches. Four hours per week. **Credit may not be received for more than one of the following: MATH 102, 118, 122.**

**Objective:** To develop a foundation for collegiate-level mathematics.

**Prerequisite:** High School Algebra II and Geometry.

**Text:** “Algebra & Trigonometry Enhanced with Analytic Geometry,” by Swokowski & Cole; Brooks/Cole, 13<sup>th</sup> Edition, 2012.

**Technology:** A graphing calculator or Maple package (Computer software available in campus labs)

	<b>Weeks</b>
<b><i>Graphs, Equations and Inequalities, Exponents, Algebraic Expression</i></b>	2.0
Solving equations and inequalities. Graphing equations, lines and circles.	
<b><i>Functions and their Graphs</i></b>	2.0
Functions. Definition of Fractions, Linear and Quadratic Functions, Operations on Functions. Graphing Functions. Mathematical Models.	
<b><i>Polynomial and Rational Functions</i></b>	2.0
Power Functions. Polynomial Functions. Rational Functions. Real Zeros. Complex Zeros.	
<b><i>Exponential and Logarithmic Functions</i></b>	2.0
Composite Functions. Inverse Functions. Properties of Exponential Functions. Properties of Logarithms. Solving Exponential and Logarithmic equations. Compound interest. Growth and decay.	
<b><i>Trigonometric Functions</i></b>	2.0
Angles. Right triangle trigonometry. Trigonometric values at special and at general angles. Unit Circle. Graphs of trigonometric functions.	
<b><i>Analytic Trigonometry</i></b>	1.5
Inverse Trigonometric Functions. Trigonometric identities and formulas. Solving Trigonometric equations.	
<b><i>Applications of Trigonometric Functions</i></b>	1.5
Solving right triangles. Laws of Sines and Cosines. Areas of triangles.	
<b><i>Tests</i></b>	<u>1.0</u>
	14.0

APPROXIMATE EVALUATION

Quizzes & Selected Problems	15 - 25%
Tests (4)	50 - 60%
Final Exam	15 - 25%

*Free tutoring is available for this course during the Spring and Fall semesters.*