

**Departmental Syllabus**  
**Math 2530 -- Trigonometry and Analytic Geometry**

**Textbook:** Algebra and Trigonometry, 6<sup>th</sup> Edition, by Larson and Hostetler

**Prerequisites:** MATH 1530 with a grade of “C” or better or mathematics proficiency level of 30 or above.

**Calculators:** Graphing calculator required; TI-83, 85, or 86 recommended. (NOTE: On occasion, individual instructors may restrict the use of any type of calculator.)

**Course Description:** Functions and their graphs, trigonometric and inverse trigonometric functions, trigonometric identities and formulas, solution of triangles, complex numbers, exponential and logarithmic functions, and conic sections. (Together MATH 1530 and MATH 2530 are equivalent to MATH 2450. Students will not receive credit for both MATH 2450 and MATH 2530.)

**TOPICS AND SECTIONS TO BE COVERED:**

- P.7 Graphical Representation of Data
  - 1.1 Graphs of Equations
  - 2.1 Linear Equations in Two Variables
  - 2.2 Functions
  - 2.3 Analyzing Graphs of Functions
  - 2.4 A Library of Functions
  - 2.5 Shifting, Reflecting, and Stretching Graphs
  - 2.6 Combinations of Functions
  - 2.7 Inverse Functions
  - 3.1 Quadratic Functions
  - 3.5 Mathematical Modeling
  - 4.4 Conics
  - 4.5 Translations of Conics
  - 5.1 Exponential Functions and Their Graphs
  - 5.2 Logarithmic Functions and Their Graphs
  - 5.3 Properties of Logarithms
  - 5.4 Exponential and Logarithmic Equations
  - 5.5 Exponential and Logarithmic Models
  - 6.1 Angles and Their Measure
  - 6.2 Right Triangle Trigonometry
  - 6.3 Trigonometric Functions of Any Angle

- 6.4 Graphs of Sine and Cosine Functions
- 6.5 Graphs of Other Trigonometric Functions
- 6.6 Inverse Trigonometric Functions
- 6.7 Applications and Models
  
- 7.1 Using Fundamental Identities
- 7.2 Verifying Trigonometric Identities
- 7.3 Solving Trigonometric Equations
- 7.4 Sum and Difference Formulas
- 7.5 Multiple-Angle Formulas  
Product-to-Sum Formulas (optional)
  
- 8.1 Law of Sines
- 8.2 Law of Cosines
- 8.5 Trigonometric Form of a Complex Number (optional)