

OFFICIAL SYLLABUS

**MATH125 - PRE-CALCULUS MATHEMATICS WITH  
TRIGONOMETRY** (Adopted - Fall 2003)

**Catalog Description.** Trigonometric functions and their applications, inverse trigonometric functions, trigonometric identities and equations, laws of sines and cosines, complex numbers and deMoivre's theorem. Prerequisites: 6 semesters of high school mathematics, or 120 with a C or better.

**Textbook - *PRECALCULUS***, by Michael Sullivan (Sixth Edition)

***Course Outline and Topics***

Chapter 5 – Trigonometric Function

- 5.1 Angles and Their Measure
- 5.2 Trigonometric Functions: Unit Circle Approach
- 5.3 Properties of the Trigonometric Functions
- 5.4 Graphs of the Sine and Cosine Functions
- 5.5 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions
- 5.6 Phase Shift

Chapter 6 – Analytic Trigonometry

- 6.1 The Inverse Sine, Cosine, and Tangent Functions
- 6.2 The Inverse Trigonometric Functions (continued)
- 6.3 Trigonometric Identities
- 6.4 Sum and Difference Formulas
- 6.5 Double-Angle and Half-Angle Formulas
- 6.7 Trigonometric Equations I
- 6.8 Trigonometric Equations II

Chapter 7 – Applications of Trigonometric Functions

- 7.1 Right Triangle Trigonometry
- 7.2 The Law of Sines
- 7.3 The Law of Cosines
- 7.4 The Area of a Triangle

Chapter 8 – Polar Coordinates

- 8.1 Polar Coordinates
- 8.3 The Complex Plane: De Moivre's Theorem

Chapter 3 – Polynomial and Rational Functions

- 3.3 Rational Function I
- 3.4 Rational Function II
- 3.5 Polynomial and Rational Inequalities

Chapter 11 – The Binomial Theorem

- 11.5 The Binomial Theorem

**Any instructor should cover all of the material specified, additional sections are optional.**