Math 1113

PRECALCULUS

Master Syllabus

Valdosta State University - Mathematics Department

Math 1113 is a 3 credit hour course.

Prerequisites:
Math 1112(Trigonometry) with a C or better or with Math Placement score.

Course Description:
Math 1113 is a study in Advanced Algebra and Trigonometry, Conics and Polar Coordinates.

Learning Outcomes
  1.)**Identify types of functions, their domain and range, and be able to analyze these functions from a numeric, graphical, and symbolic point of view. The functions include linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric.**
  2.)**Identify and find the inverse of functions.**
  3.)**Use the various functions to solve application problems.**
  4.)**Apply transformations to various graphs of functions**

*For additional information about your particular course including grading, textbook, assignments and tests, contact your course instructor for your course syllabus.

General Outline of Topics
  1.)**Graphs and Functions**
     - **Transformations with graphs**
     - **Composition of functions**
     - **Inverses of functions**

  2.)**Polynomial and Rational Functions**
     - **Graph the Quadratic, polynomial, and rational functions**
     - **Discuss End Behavior of functions and find the zeros.**
     - **Variation Problems**

3.) Exponential and Logarithm Functions
- Graph the exponential and logarithm function
- Application problems – Growth, Decay, Compound interest
- National Exponential Function
- Rules and Laws of Logarithms
- Solving exponential equations

4.) Trigonometric Functions
- Angles and their measure – Unit Circle & Evaluate the trig functions
- Reference angles
- Trigonometric identities
- Even and Odd functions
- Graphs of the Trigonometric functions
- Inverse Trig functions

5.) Analytic Trigonometry
- Solving Trig Equations
- More Trig Identities
- Formulas: Sum, Difference, Double-Angle, Half-Angle, Sum-to-Product, Product-to-Sum

6.) Applications of the Trigonometric Function
- Right Triangle Trigonometry
- Law of Sines and Cosines
- Polar Coordinates

7.) Analytic Geometry
- Conic Sections: Parabola, Ellipse. Hyperbola