Pre-Calculus - Course Syllabus

Description:
Exploring the relationship between advanced algebra topics and trigonometry, Pre-Calculus is an informative introduction to calculus that challenges students to discover and comprehend the nature of graphs, nonlinear systems, and polynomial and rational functions. Encouraging logarithmic knowledge and application, this course covers many interesting and advanced subject areas in a thoughtful and supportive format, providing students a deeper understanding of topics, including limits, continuity, derivatives, and the Fundamental Theorem of Calculus.

Textbook: Pre-Calculus ISBN-13: 978-1-938168-34-5

Course objectives:
Throughout the course, you will meet the following goals:
- Extend on previous coursework with functions with a more in-depth analysis of polynomial and transcendental functions.
- Use matrices and vectors to solve mathematical and real-world problems.
- Use parametric equations to describe functions and model real-world concepts.
- Analyze conic sections and their rotations in Cartesian and polar coordinate systems.
- Perform statistical analysis using normal distribution approximations.
- Understand the concepts of a limit, a derivative, and an integral and how they are related via the Fundamental Theorem of Calculus.

Contents:

Semester A
Chapter 1: Functions and Their Graphs
Chapter 2: Polynomial and Rational Functions
Chapter 3: Exponential and Logarithmic Functions
Chapter 4: Trigonometric Functions
Chapter 5: Analytic Trigonometry
Chapter 6: Additional Topics in Trigonometry

Semester B
Chapter 7: Linear Systems and Matrices
Chapter 8: Sequences, Series, Probability
Chapter 9: Topics in Analytic Geometry
Chapter 10: Analytic Geometry in 3D
Chapter 11: Limits and an Intro to Calculus

Grading Scale
A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F = under 59%

Grade Weighting
Chapter Quizzes………… 70%
Cumulative Exam ……….. 30%
100%