math270 Syllabus

Math 270: Calculus I

Text: Calculus Early Transcendentals, 11th edition, Anton, Bivens, and Davis, Wiley, 2015

Prerequisites: Minimum ACT math score of 28, math 109 and math 110 with a grade of C or better, math 143 with a grade of C or better, or placement by the Advance Credit Exam.

A TI-83,TI-83 Plus, TI-84, TI-84 Plus, or TI NSpire (no CAS) Graphics Calculator is required.

Sections and Topics

- Basic Review
- 1.1 Limits
- 1.2 Computing Limits
- 1.3 Limits at Infinity; End Behavior of a Function
- 1.5 Continuity
- 1.6 Continuity of Trigonometric Functions
- 1.7 Inverse Trigonometric Functions
- 1.8 Exponential and Logarithmic Functions
- 2.1 Tangent Lines and Rates of Change
- 2.2 The Derivative Function
- 2.3 Introduction to Techniques of Differentiation
- 2.4 The Product and Quotient Rules
- 2.5 Derivatives of Trigonometric Functions
- 2.6 The Chain Rule
- 3.1 Implicit Differentiation
- 3.2 Derivatives of Logarithmic Functions
- 3.3 Derivatives of Exponential and Inverse Trigonometric Functions
- 3.4 Related Rates
- 3.5 Local Linear Approximation; Differentials
- 3.6 L'Hopital's Rule; Indeterminate Forms
- 4.1 Analysis of Functions I: Increase, Decrease, and Concavity
- 4.2 Analysis of Functions II: Relative Extrema; Graphing Polynomials
- 4.3 Analysis of Functions III: Rational Functions, Cusps, and Vertical Tangents
- 4.4 Absolute Maxima and Minima
- 4.5 Applied Maximum and Minimum Problems
- 4.6 Rectilinear Motion
- 4.8 Rolle's Theorem; Mean-Value Theorem
- 5.1 An Overview of the Area Problem
- 5.2 The Indefinite Integral
- 5.3 Integration by Substitution

- 5.4 The Definition of Area as a Limit
- 5.5 The Definite Integral
- 5.6 The Fundamental Theorem of Calculus
- 5.7 Rectilinear Motion
- 5.8 Average Value of a Function
- 5.9 Definite Integration and Substitution
- 5.10 Functions Defined by Integrals

Last updated 1 November 2019.