math250 Syllabus

Math 250: Survey of Calculus

Text: *Applied Calculus, 6th edition*, Hughes-Hallet, Gleason, Lock, Flath, *et al.*, Wiley, 2018

Prerequisites: Math 103/104, Math 105, Math 143, or Math 109 with a grade of C or better.

Our textbook concentrates on the most important topics of calculus with emphasis on the graphical and numerical representation of functions and other relations as well as the traditional use of symbolic formulas. The materials in our text are meant to be read thoroughly and carefully. The writing is plain and straightforward. Please include reading tomorrow's section in your assignment every day. The authors include several types of in-depth problems designed to develop conceptual understanding, rather than routine "drill" examples. The aim is to have you understand and apply the concepts, rather than mimic examples from the textbook. In this course, a graphing calculator is required for visualization and numerical computation.

Sections and Topics

- 1.1 What Is a Function?
- 1.2 Linear Functions
- 1.3 Average Rate of Change & Relative Change
- 1.4 Applications of Functions to Economics
- 1.5 Exponential Functions
- 1.6 The Natural Logarithm
- 1.7 Exponential Growth and Decay
- 1.8 New Functions from Old
- 1.9 Proportionality, and Power Functions
- 2.1 Instantaneous Rate of Change
- 2.2 The Derivative Function
- 2.3 Interpretations of the Derivative
- 2.4 The Second Derivative
- 2.5 Marginal Cost and Revenue
- 3.1 Derivative Formulas for Powers and Polynomials
- 3.2 Exponential and Logarithmic Functions
- 3.3 The Chain Rule
- 3.4 Product and Quotient Rules
- Focus on Practice p. 168
- 4.1 Local Maxima and Minima
- 4.2 Inflection Points
- 4.3 Global Maxima and Minima
- 4.4 Profit, Cost, and Revenue
- 4.5 Average Cost

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