



**Catalog Description:**

Limits, continuity, derivatives, mean value theorem, extrema, curve sketching, related rates, differentiation of the trig, log, and exponential functions, basic integration techniques, with particular motivations from and application to the Biological Sciences.

**Prerequisite:**

A grade of C- or above in 1148 and 1149, or a grade of C- or above in 1150, or credit for 150, or Math Placement Level L. Not open to students with credit for 1151 (151.xx) or above. GE quant reason math and logical analysis course.

**Exclusions:**

Not open to students with credit for 1151, or with credit for any higher numbered math class.

**Purpose of Course:**

To provide students with a solid foundation in one-variable differential calculus, to model and analyze phenomena in the Biological Sciences.

**Follow-up Course:**

Math 1157

**Text:**

*Calculus for Biology and Medicine*, 3<sup>rd</sup> Edition, by Claudia Neuhauser, Pearson, ISBN 9780321644688

**Topics List:**

- 1.2 Elementary Functions
  - 1.3/2.1 Graphing/Exponential Growth and Decay
  - 2.2 Sequences
  - 3.1-3.4 Limits and Continuity
  - 3.5 Properties of Continuous Functions
  - 4.1 Derivatives
  - 4.2-4.3 Rules of Differentiation, Product and Quotient Rules
  - 4.4 Chain Rule and Higher Derivatives
  - 4.5-4.7 Derivatives of Special Functions and Inverse Functions
  - 5.1-5.3 Extrema, Mean Value Theorem, Monotonicity, Concavity, Inflection Points
  - 5.4 Optimization
  - 5.5 L'Hospital's Rule
  - 5.8 Antiderivatives
  - 6.1 The Definite Integral
  - 6.2 The Fundamental Theorem of Calculus
  - 6.3 Applications of Integration
  - 7.1-7.2 Integration Techniques
- Also: Small-group Projects