

Torrey Pines High School Calculus C

San Diego State University Math 151 Calculus II (4 semester units)

Note: Students in Calculus C passed the AP Calculus AB exam. They covered all topics for that exam as outlined in the *Advanced Placement Program Course Description: Calculus* published by The College Board.

Text: *Calculus: Early Transcendentals* by James Stewart, Sixth Edition, ©2008

Chapter 7 – Techniques of Integration

- 7.1 Integration by Parts
- 7.2 Trigonometric Integrals
- 7.3 Trigonometric Substitution
- 7.4 Integration of Rational Functions by Partial Fractions
- 7.5 Strategy for Integration
- 7.6 Integration Using Tables and Computer Algebra Systems
- 7.7 Approximate Integration*
- 7.8 Improper Integrals
- Also L'Hospital's Rule

Note: Prior to Fall 2008, this course followed the fourth edition (1999) of the Stewart text. The course curriculum was the same as listed here.

Chapter 8 – Further Applications of Integration

- 8.1 Arc Length
- 8.2 Area of a Surface of Revolution

Chapter 11 – Infinite Sequences and Series

- 11.1 Sequences
- 11.2 Series
- 11.3 The Integral Test and Estimates of Sums
- 11.4 The Comparison Tests
- 11.5 Alternating Series
- 11.6 Absolute Convergence and the Ratio and Root Tests
- 11.7 Strategy for Testing Series
- 11.8 Power Series
- 11.9 Representation of Functions as a Power Series
- 11.10 Taylor and Maclaurin Series
- 11.11 Applications of Taylor Polynomials

Chapter 9 – Differential Equations

- 9.1 Modeling with Differential Equations
- 9.2 Direction Fields and Euler's Method
- 9.3 Separable Equations
- 9.4 Models for Population Growth
- 9.5 Linear Equations
- 9.6 Predator-Prey Systems*

Chapter 10 – Parametric Equations and Polar Coordinates

- 10.1 Curves Defined by Parametric Equations
- 10.2 Calculus with Parametric Curves
- 10.3 Polar Coordinates
- 10.4 Areas and Lengths in Polar Coordinates
- 10.5 Conic Sections*
- 10.6 Conic Sections in Polar Coordinates*

Chapter 12 – Vectors and the Geometry of Space

- 12.1 Three-Dimensional Coordinate Systems
- 12.2 Vectors
- 12.3 The Dot Product
- 12.4 The Cross Product

Formal Definitions of Limits (Part of Chapter 2)
Finite Limits
Infinite Limits
Limits at Infinity
Infinite Limits at Infinity

*Topic covered in a previous course or only covered briefly.

For more information, please refer to www.abbymath.com.