Textbook:


Prerequisite Course: MAT 1500 Calculus I

Chapter 5: Integrals

5.3 Fundamental Theorem of Calculus, Review
5.4 Indefinite Integrals
5.5 The Substitution Rule

Chapter 6: Applications of Integration

6.1 Areas Between Curves
6.2 Volumes
6.4 Work (Optional)
6.5 Average Value of a Function

Chapter 7: Techniques of Integration

7.1 Integration by Parts
7.2 Trigonometric Integrals (Optional)
7.3 Trigonometric Substitution (Optional)
7.4 Integration of Rational Functions by Partial Fractions (Optional)
7.7 Approximate Integration
7.8 Improper Integrals

Chapter 8: Further Applications of Integration

8.1 Arc Length
8.4 Applications to Economics and Biology
8.5 Probability

Chapter 11: Infinite Sequences and Series
11.1 Sequences
11.2 Series (emphasize geometric series)
11.3 The Integral Test & Estimates of Sums
11.4 The Comparison Test
11.5 Alternating Series
11.6 Absolute Convergence, Ratio & Root Tests
11.8 Power Series**
11.9 Representations of Functions as Power Series**
11.10 Taylor and Maclaurin Series**
11.11 Application of Taylor Polynomials

** emphasize these sections

Chapter 10: Parametric Equations and Polar Coordinates

10.1 Curves Defined by Parametric Equations
10.2 Calculus with Parametric Equations
10.3 Polar Coordinates
10.4 Areas and Lengths in Polar Coordinates

Chapter 9: Differential Equations (if time allows)

9.1 Modeling with Differential Equation (Optional)
9.2 Direction Fields & Euler's Method (Optional)
9.3 Separable Equations (Optional)
9.4 Models for Population Growth (Optional)

This material is covered over a 14 week (56 class hours) semester.