Calculus II – MATH.1320 Course Coverage

Sections of University Calculus Early Transcendentals, 4th edition, that are covered in Calculus II

Chapter 5: Integrals

- 5.1: Area and Estimating with Finite Sums
- 5.2: Sigma Notation and Limits of Finite Sums
- 5.3: The Definite Integral
- 5.4: The Fundamental Theorem of Calculus
- 5.5: Indefinite Integrals and the Substitution Method
- 5.6: Definite Integral Substitutions and the Area Between Curves

Chapter 6: Applications of Definite Integrals

- 6.1: Volumes Using Cross-Sections
- 6.2: Volumes Using Cylindrical Shells
- 6.3: Arc Length
- 6.4: Areas of Surfaces of Revolution

Chapter 7: Integrals and Trancendental Functions

- 7.1: The Logarithm Defined as an Integral (Optional)

Chapter 8: Techniques of Integration

- 8.1: Integration by Parts
- 8.2: Trigonometric Integrals
- 8.3: Trigonometric Substitutions
- 8.4: Integration of Rational Functions by Partial Fractions
- 8.5: Integral Tables and Computer Algebra Systems (Optional)
- 8.6: Numerical Integration
- 8.7: Improper Integrals

Chapter 9: Infinite Sequences and Series

- 9.1: Sequences
    - pages 495 - 499
    - Theorems 4, 5 and 6 (pages 500, 502, and 504, respectively)
- 9.2: Infinite Series
- 9.3: The Integral Test (in the context of p-series only)
- 9.4: Comparison Tests (Limit Comparison Test only)
- 9.5: Absolute Convergence; The Ratio and Root Tests (Ratio Test Only)
- 9.6: Alternating Series and Conditional Convergence (skip Theorem 17)
- 9.7: Power Series
- 9.8: Taylor and Maclaurin Series

- 9.9: Convergence of Taylor Series
- 9.10: Applications of Taylor Series

Chapter 10: Parametric Equations and Polar Coordinates

- 10.3: Polar Coordinates
- 10.4: Graphing Polar Coordinate Equations
- 10.5: Areas and Lengths in Polar Coordinates (Optional)