

MA172: Calculus II

Baker University — Spring 2023

Course Outline

Each of the following comes from the text *Calculus: Early Transcendentals* by James Stewart.

Exam 1 — Integration: Techniques and Strategies

- §4.9: Antiderivatives
- §5.1: Areas and Distances
- §5.2: The Definite Integral
- §5.3: The Fundamental Theorem of Calculus
- §5.4: Indefinite Integrals and the Net Change Theorem
- §5.5: The Substitution Rule
- §7.1: Integration by Parts
- §7.2: Trigonometric Integrals
- §7.3: Trigonometric Substitution
- §7.4: Integration of Rational Functions by Partial Fractions
- §7.8: Improper Integrals

Exam 2 — Integration: Applications and Modeling

- §6.1: Areas Between Curves
- §6.2: Volumes
- §6.3: Volumes by Cylindrical Shells
- §6.4: Work
- §8.1: Arc Length
- §10.1: Curves Defined by Parametric Equations
- §10.2: Calculus with Parametric Curves
- §10.3: Polar Coordinates
- §10.4: Areas and Length in Polar Coordinates

Exam 3 — 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 Test
- §11.7: Strategy for Testing Series
- §11.8: Power Series
- §11.9: Representations of Functions as Power Series
- §11.10: Taylor and Maclaurin Series
- §11.11: Applications of Taylor Polynomials
- §8.5: Probability