

Text: “Calculus” by James Stewart, 5th edition, Brooks/Cole Publishing Company

The following sections from the text will be covered.

Part I. Integration

- App. E sigma notation
- 5.1 area
- 5.2 definite integral
- 5.3 fundamental theorem of calculus
- 5.4 indefinite integrals
- 6.4 work
- 8.8 improper integrals
- 9.1 arclength
- 9.2 surface area
- 9.3 center of mass
- 9.5 probability density functions

Review (as needed)

- 5.5 substitution
- 7.5 inverse trigonometric functions
- 7.6 hyperbolic functions
- 7.7 L’Hopital’s rule
- 8.1 integration by parts
- 8.2 trigonometric integrals
- 8.3 trigonometric substitution
- 8.4 partial fractions

Part II. Differential Equations

- 10.1 modeling with differential equations
- 10.4 exponential growth and decay
- 10.5 logistic equation

Part III. Series

- 12.1 sequences
- 12.2 series
- 12.3 integral test
- 12.4 comparison test
- 12.5 alternating series
- 12.6 absolute convergence, ratio test
- 12.8 power series 1
- 12.9 power series 2
- 12.10 Taylor series
- 12.11 binomial series
- 12.12 applications of Taylor polynomials

Additional Topics

- 11.3 polar coordinates
- App. G complex numbers