

16. CALCULUS II
Spring 1998
Warren Wong

Text: Thomas & Finney, Calculus, 9th ed.

Chapter 6 Transcendental Functions (12 classes)

- 1 Inverse functions and their derivatives
- 2 Natural logarithms
- 3 The exponential function
- 4 a^x and $\log a x$
- 5 Growth and decay
- 6 L'Hopital's rule
- 7 Relative rates of growth
- 8 Inverse trigonometric functions
- 9 Derivatives of inverse trigonometric functions; integrals
- 10 Hyperbolic functions
- 11 First order differential equations

Chapter 7 Techniques of Integration (6 classes)

- 1 Basic integration formulas
- 2 Integration by parts
- 3 Partial fractions
- 4 Trigonometric substitutions
- 6 Improper integrals

Chapter 8 Infinite Series (14 classes)

- 1 Limits of sequences of numbers
- 2 Theorems for calculating limits of sequences
- 3 Infinite series
- 4 The integral test for series of nonnegative terms
- 5 Comparison tests for series of nonnegative terms
- 6 The ratio and root tests for series of nonnegative terms
- 7 Alternating series, absolute and conditional convergence
- 8 Power series
- 9 Taylor and Maclaurin series
- 10 Convergence of Taylor series; error estimates
- 11 Applications of power series

Chapter 9 Conic Sections, Parametrized Curves, and Polar Coordinates
(9 classes)

- 1 Conic sections and quadratic equations
- 2 Classifying conic sections by eccentricity
- 4 Parametrizations of plane curves
- 5 Calculus with parametrized curves
- 6 Polar coordinates
- 8 Polar equations for conic sections
- 9 Integration in polar coordinates