

# OFFICIAL SYLLABUS

## MATH 152 - CALCULUS II

(Adopted - Fall 2010; Committee: Z. Agustin, G. Pelekanos, S. Staples)  
(Updated Fall 2016 to reflect eighth edition of textbook.)

Textbook: Calculus, Early Transcendentals, Eighth Edition, by J. Stewart with Webassign

### Ch. 6. Integrals

- 6.1 Areas between Curves
- 6.2 Volumes
- 6.3 Volumes by Cylindrical Shells
- 6.4 Work (**optional**)
- 6.5 Average Value of a Function

### Ch. 7. Techniques of Integration

- 7.1 Integration by Parts
- 7.2 Trigonometric Integrals
- 7.3 Trigonometric Substitution
- 7.4 Integration of Rational Functions by Partial Fractions
- 7.5 Strategy for Integration
- 7.6 Integration Using Tables and Computer Algebra Systems (**optional**)
- 7.7 Approximate Integration
- 7.8 Improper Integrals\*

### Ch. 8. Further Applications of Integration

- 8.1 Arc Length
- 8.2 Area of a Surface of Revolution
- 8.3 Applications to Physics and Engineering

### Ch. 11. Infinite 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 Tests
- 11.7 Strategy for Testing Series
- 11.8 Power Series
- 11.9 Representations of Functions as Power Series
- 11.10 Taylor and Maclaurin Series

### Ch. 10. Parametric Equations and Polar Coordinates

- 10.1 Curves Defined by Parametric Equations
- 10.2 Calculus with Parametric Curves
- 10.3 Polar Coordinates
- 10.4 Areas and Lengths in Polar Coordinates
- 10.5 Conic Sections
- 10.6 Conic Sections in Polar Coordinates

**Any instructor should cover all of the material specified; additional sections are optional.**

\* May require review of Section 4.4, Indeterminate Forms and L'Hospital's Rule