

SOUTHEASTERN LOUISIANA UNIVERSITY
DEPARTMENT OF MATHEMATICS
MATH 201 SYLLABUS

COURSE TITLE: Calculus II

CREDIT: 5 semester hours

PREREQUISITE: Math 200

CATALOGUE DESCRIPTION: The second of a standard three-course sequence on the foundations of differential and integral calculus. Topics include integration techniques, applications of the definite integral, and infinite series. Calculus will be used in the solution of real world applications.

TEXT: *Calculus of a Single Variable*, 8th Edition by Larson, Hostetler, and Edwards

PUBLISHER: Houghton Mifflin

TOPICS COVERED: Based upon the current textbook, the following outline allows for 5 regular examinations and the final examination. The section numbers are given in parentheses after each topic:

Applications of Integration (3.5 Weeks – Chapter 7)

- Area of a Region Between Two Curves (7.1)
- Volume: The Disk Method (7.2)
- Volume: The Shell Method (7.3)
- Arc Length and Surfaces of Revolution (7.4)
- Work (7.5)

Integration Techniques, L'Hopital's Rule, and Improper Integrals (4 Weeks – Chapter 8)

- Basic Integration Rules (8.1)
- Integration by Parts (8.2)
- Trigonometric Integrals (8.3)
- Trigonometric Substitution (8.4)
- Partial Fractions (8.5)
- Indeterminate Forms and L'Hopitals' Rules (8.7)
- Improper Integrals (8.8)

Infinite Series (4 Weeks – Chapter 9)

- Sequences (9.1)
- Series and Convergence (9.2)
- The Integral Test and p-series (9.3)
- Comparisons of Series (9.4)
- Alternating Series (9.5)
- The Ratio and Root Tests (9.6)
- Taylor Polynomials and Approximations (9.7)
- Power Series (9.8)
- Taylor and Maclaurin Series (9.9)

Conics, Parametric Equations, and Polar Coordinates (3.5 Weeks – Chapter 10)

- Conics and Calculus (10.1)
- Plane Curves and Parametric Equations (10.2)
- Parametric Equations and Calculus (10.3)
- Polar Coordinates and Graphs (10.4)
- Area and Arc Length in Polar Coordinates (10.5)
- Polar Equations of Conics (10.6)

EMAIL REQUIREMENT: All correspondence will be made through students' Southeastern email accounts.

DISABILITY ACCESS STATEMENT: If you are a qualified student with a disability seeking accommodations under the Americans with Disabilities Act, you are required to self-identify with the Office of Disability Services, Room 203, Student Union. No accommodations will be granted without documentation from the Office of Disability Services.

ACADEMIC INTEGRITY: Students are expected to maintain the highest standards of academic integrity. Behavior that violates these standards is not acceptable. Examples include the use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination or other class work.