

Bossier Parish Community College

Master Syllabus

Course Prefix and Number: MATH 251

Credit Hours: 3-3-0

Course Title: Calculus II

Course Prerequisites: A grade of “C” or higher in Math 250 or consent of instructor.

Textbook(s) (when applicable): Thomas, George B. Calculus, 14th edition. Pearson, 2018. ISBN: 9780134439020

Course Description: Topics include integration; applications of definite integrals; integrals and transcendental functions; and techniques of integration.

Learning Outcomes:

At the end of this course, the student will:

- A. perform integration;
- B. perform applications of definite integrals;
- C. perform integrals and transcendental functions; and
- D. perform techniques of integration.

To achieve the learning outcomes, the student will or will be able to:

(The letter designations at the end of each statement refer to the learning outcome(s).)

- 1. find area and estimate with finite sums; (A)
- 2. define sigma notation with limits of finite sums; (A)
- 3. apply the definite integral; (A)
- 4. apply the Fundamental Theorem of Calculus; (A)
- 5. use the substitution method to compute the indefinite integral; (A)
- 6. find volumes using cross-sections; (B)
- 7. find volumes using cylindrical shells; (B)
- 8. compute arc length; (B)
- 9. find areas of surfaces of revolution; (B)
- 10. work and fluid forces; (B)
- 11. moments and centers of mass; (B)
- 12. use the logarithm defined as an integral; (C)
- 13. find exponential change and separable differential equations; (C)
- 14. use hyperbolic functions; (C)
- 15. find relative rates of growth; (C)
- 16. integration by parts; (D)
- 17. perform trigonometric integrals; (D)
- 18. perform trigonometric substitutions; (D)
- 19. perform integration of rational functions by partial fractions; (D)
- 20. use integral tables and compute algebra systems; (D)
- 21. perform numerical integration; (D) and
- 22. perform improper integrals. (D)

Course Requirements: All students are required to take a final exam.

Course Grading Scale:

90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
0 – 59 = F

Attendance Policy: The college attendance policy is available at
<http://www.bpcc.edu/catalog/current/academicpolicies.html>

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams and/or clinical fees.

Nondiscrimination Statement: Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

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