

Bossier Parish Community College

Master Syllabus

Course Prefix and Number: MATH 250

Credit Hours: 3-3-0

Course Title: Calculus I

Course Prerequisites: A grade of “C” or higher in MATH 111 and MATH 112 or consent of instructor.

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

Course Description: Topics include functions; limits and continuity; differentiation; applications of derivatives.

Learning Outcomes:

At the end of this course, the student will:

- A. compute limits and continuity;
- B. perform basic rules of differentiation;
- C. execute and apply rules of differentiation; and
- D. solve applications of derivatives.

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 the average rate of change of a function; (A)
2. find the limit of a function; (A)
3. find the equation of a tangent line to a curve at a specific point; (A)
4. find left and right hand limits; (A)
5. find the limit of trigonometric functions; (A)
6. find delta for a given epsilon; (A)
7. determine where a function is continuous; (A)
8. find the limit as a function approaches positive/negative infinity; (A)
9. find the horizontal, vertical, and/or oblique asymptotes; (A)
10. find the equation of a tangent line at a specific point using the formal definition of a derivative; (B)
11. use the formal definition of a derivative to find the value of a function; (B)
12. find the first derivative of a function; (B)
13. find the second derivative of a function; (B)
14. solve applications using first, second, and third derivatives; (B)
15. use implicit differentiation to find the first derivative; (C)
16. use implicit differentiation to find the second derivative; (C)
17. use logarithmic differentiation to find the derivative; (C)
18. find the derivative of inverse trig functions; (C)
19. solve related rate problems; (C)
20. find the linearization of a function; (C)
21. find the absolute maximum/minimum values of a function on a given interval; (D)
22. determine the critical points of a function; (D)
23. determine over what intervals a function increases/decreases; (D)
24. find the local maximum/minimum values of a function on a given interval; (D)
25. determine points of inflection of a function; (D)
26. determine over what intervals a function concave up/down; (D)

27. sketch a curve using first and second derivatives; (D)
28. apply l'Hopital's rule to find the limit; (D) and
29. find the antiderivative; (D)

Course Requirements: All students are required to take a comprehensive final exam. When this course is taken in an online environment, the department has established a minimum grade of 60% on the final exam required to earn a grade of "C" or higher in the course. If this minimum score is not obtained by the student, then the student shall refer to the policy outlined in the course syllabus which will supersede the course grading scale shown below. All students will take the final exam in a monitored and controlled setting. Students who live less than one hour from Bossier Parish Community College (as determined by Google Maps using the address the student has listed in LoLA) will take the exam on the campus. Students who live outside of the area must notify their instructor via email to discuss alternate testing locations. **Under no circumstances will any student take the exam online in an unmonitored and uncontrolled situation.**

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.

COORDINATOR FOR SECTION 504 AND ADA

Angie Cao, Student and Disability Services Specialist

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Equity/Compliance Coordinator

Teri Bashara, Director of Human Resources

Human Resources Office, A-105

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