

CALCULUS I

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CLASS POLICIES

Attendance – Students attain maximum academic benefit through regular attendance. Therefore, students are expected to attend all class sessions that they are scheduled. Students are advised that attendance at each class is expected and will be recorded. Failure to attend each class could jeopardize the student's successful completion of the course. Absence will not be considered a valid excuse for not being prepared for the next class. If an unexpected emergency preventing attendance arises, the instructor should be notified on the day of the missed class.

Tests/Make-up Tests – If a student emails me at gbuthusi@rcgc.edu with a documented excused absence no later than the day of the missed test that student will then have 24 hours to make up the test. Also the final exam can replace a missed or lowest test grade.

Grading Distribution

Category	Percent of Final Grade
Test #1	25%
Test #2	25%
Test #3	25%
Final Exam	25%

Grading Scale

The following grading scale will be used in this course:

93% - 100% = A	73% - 76% = C
90% - 92% = A-	70% - 72% = C-
87% - 89% = B+	67% - 69% = D+
83% - 86% = B	63% - 66% = D
80% - 82% = B-	60% - 62% = D-
77% - 79% = C+	Below 60% = F

Homework – Students should expect to spend at least two hours working outside of class for every hour spent in class. Specific assignments will be given in class. Solutions to odd numbered problems can be found at calcchat.com. Homework is to be completed for each section covered to fully understand the material. It will NOT be collected.

Electronics – Cell phone and texting devices detract from active learning time in the classroom and therefore, are not permitted during class time. A calculator can be used in this course and TI-83/84 is recommended.

Academic Integrity – In its most elementary form, academic integrity encompasses the principles of an honest, fair and continuing pursuit of the truth, and means that students are expected to do and be responsible for their own work. Therefore, cheating, plagiarism, fabrication, collusion or any other violation of academic integrity is not acceptable and the instructor will impose an academic sanction which is reasonable and commensurate with the violation

TOPICAL OUTLINE

Chapter 1 Limits and Their Properties

- 1.1 A Preview of Calculus
- 1.2 Finding Limits Graphically and Numerically
- 1.3 Evaluating Limits Analytically
- 1.4 Continuity and On-Sided Limits
- 1.5 Infinite Limits

Chapter 2 Differentiation

- 2.1 The Derivative and the Tangent Line Problem
- 2.2 Basic Differentiation Rules and Rates of Change
- 2.3 Product and Quotient Rules and Higher-Order Derivatives
- 2.4 The Chain Rule
- 2.5 Implicit Differentiation
- 2.6 Related Rates

Chapter 3 Applications of Differentiation

- 3.1 Extrema on an Interval
- 3.2 Rolle's Theorem and the Mean Value Theorem
- 3.3 Increasing and Decreasing Functions and the First Derivative Test
- 3.4 Concavity and the Second Derivative Test
- 3.5 Limits at Infinity
- 3.6 A Summary of Curve Sketching
- 3.7 Optimization
- 3.9 Differentials

Chapter 4 Integration

- 4.1 Antiderivatives and Indefinite Integration
- 4.2 Area
- 4.3 Riemann Sums and Definite Integrals
- 4.4 The Fundamental Theorem of Calculus
- 4.5 Integration by Substitution

Chapter 5 Logarithmic, Exponential, and Other Transcendental Functions

- 5.1 The Natural Logarithmic Function: Differentiation
- 5.2 The Natural Logarithmic Function: Integration
- 5.4 Exponential Functions: Differentiation and Integration
- 5.5 Bases Other Than e and Applications