Calculus and Analytical Geometry I  
MATH 2011  
Spring 2016

Instructor: Dr. Mark Freitag  
Office: AH E349
Phone: 729-2334  
Office Hours: M W 12 – 1, 2 – 4  
e-mail: mfreitag@gru.edu  
T R 1 – 2

Required Materials


A TI – 83, TI – 84, or other graphing calculator is required.

Catalog Description

An introduction to calculus including limits and continuity, derivatives of polynomial, rational, trigonometric, inverse trigonometric, exponential, and logarithmic functions, applications of derivatives, and basic integration. Prerequisite(s): MATH 1113 (grade of C or better) or placement.

Course Requirements: Students are expected to

1. Complete in-class explorations. It is expected that when labs are not completed in class, they will be finished as homework and turned in the next class period.

2. Complete all homework assignments. Written homework assignments must adhere to the following guidelines. **Failure to meet any one of these guidelines will result in an automatic score of zero.**
   - Homework assignments are to be written neatly in pencil. Any old work or errors should be cleanly erased, not scribbled out. No work should appear in the margins.
   - Problems should be listed in the same order in which they are assigned.
   - The answer to each problem should be clearly identified.
   - At least one line should be left between the end of one problem and the start of the next.
   - A statement of the original problem should not be included.
   - The answers to some questions will be easily obtained and may only require a single word, phrase, number, figure, or symbol. Writing the limited answer is sufficient.
   - The answers to some questions will require computation or problem solving. It is expected that work will be shown and neatly organized.
   - The answers to some questions will require explanation. It is expected that the explanation will be written in complete, grammatically correct sentences.
All assignments are due at the beginning of the next class period. Any assignment that is submitted late, but within one week of the due date will be automatically reduced 25%. NO ASSIGNMENT WILL BE ACCEPTED LATER THAN ONE WEEK AFTER THE GIVEN DUE DATE.

4. Complete all tests including a final exam. There will be a test given at the end of each unit. NO MAKE-UP TESTS WILL BE GIVEN!!! If you know you will have to miss a test, please see me to make other arrangements. The final exam is scheduled for Friday May 6, 2 - 4. Phone calculators, tablets, and similar devices will not be permitted on tests.

5. Complete the final exam. The final exam is scheduled for .

6. The Augusta University attendance policy is in effect. If the student is absent for more than the equivalent of 10% of class time, or 4.5 hours, regardless of cause, then the professor may withdraw the student from the class for excessive absences. However, there is some flexibility in the policy to allow students a reasonable number of absences without penalty for extraordinary personal reasons or for officially representing the university.

7. The academic regulations with regard to academic dishonesty as stated in the current Augusta University Catalog are in effect. Violations of academic honesty include cheating of all kinds, plagiarism, fraudulent research activity and/or scholarship, collusion, and false statements made to avoid negative academic consequences. Students caught cheating on any type of assignment in this course will receive a score of zero on the assignment. Written notification of unauthorized activities will be given to the student and be sent to the office of the Dean of Students.

BY ENROLLING IN THIS COURSE, YOU ACCEPT ALL CONDITIONS STATED ON THIS SYLLABUS.

Standards of Performance
Grading will consist of four types of assignments: homework assignments, explorations, tests, and a final. A point total will be kept for each type of assignment. The totals will then be weighted by the given percentages to determine your final grade.

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<tr>
<th></th>
<th>Percentage</th>
<th>Score Range</th>
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<tbody>
<tr>
<td>Explorations</td>
<td>10%</td>
<td>100 – 90</td>
<td>A</td>
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<tr>
<td>Homework Assignments</td>
<td>30%</td>
<td>89 – 80</td>
<td>B</td>
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<tr>
<td>Tests</td>
<td>45%</td>
<td>79 – 70</td>
<td>C</td>
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<td>Final Exam</td>
<td>15%</td>
<td>69 – 60</td>
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Calculus I Course Outline

Unit 1: Functions and Limits

1.1 Functions and Their Representations
1.2 A Catalog of Essential Functions
1.3 The Limit of a Function
1.4 Calculating Limits
1.5 Continuity
1.6 Limits Involving Infinity

Test 1

Unit 2 Derivatives

2.1 Derivatives and Rates of Change
2.2 The Derivative as a Function
2.3 Basic Differentiation Formulas
2.4 The Product and Quotient Rules
2.5 The Chain Rule
2.6 Implicit Differentiation

Test 2

Unit 3 Applications of Derivatives

2.7 Related Rates
2.8 Linear Approximations and Differentials
3.1 Maximum and Minimum Values
3.2 The Mean Value Theorem
3.3 Derivatives and the Shapes of Graphs
3.4 Curve Sketching
3.5 Optimization Problems
3.6 Newton's Method

Test 3

Unit 4: Integrals

3.7 Antiderivatives
4.1 Areas and Distances
4.2 The Definite Integral
4.3 Evaluating Definite Integrals
4.4 The Fundamental Theorem of Calculus
4.5 The Substitution Rule

Test 4

Unit 5: Inverse Functions

5.1 Inverse Functions
5.2 The Natural Logarithm Function
5.3 The Natural Exponential Function
5.4 General Logarithmic and Exponential Functions
5.5 Exponential Growth and Decay
5.6 Inverse Trigonometric Functions
5.7 Hyperbolic Functions
5.8 Indeterminate Forms and l'Hospital's Rule

Test 5

Review Days

Final Exam: Friday May 6, 2 - 4