

Math 315–001: Advanced Calculus I

Spring 2020: TR 1:30pm – 2:45pm, Robinson B 105

Instructor: Dr. Daniel Anderson

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Office Hours: TR 3:00–4:00pm and by appointment.

Text: *Advanced Calculus: An Introduction to Linear Analysis*, L.F. Richardson

Prerequisites: A grade of C or better in Math 213 or 215 and Math 290.

Course Goals: The goal of this course is for students to develop a rigorous foundation for calculus, learn how to write proofs, develop examples and counter examples, give precise statements of definitions and theorems and apply these ideas in various contexts.

Homework: Homework will be assigned regularly. Graded homework exercises will be scored on a scale from 0 to 4 points.

A score of 4: Your solution is complete, clear, well-presented and correct or essentially correct. This score is interpreted as full credit.

A score of 3: Your solution is essentially correct but is lacking characteristics of a 4. Possibly you have made substantial progress toward a solution and there is a well-written explanation of the partial solution. Possibly you have assembled all the pieces but failed to present a well-written explanation of your solution with the correct logical connections.

A score of 2: Your work shows some progress towards the solution. Possibly you have assembled some of the right concepts but have not put them together in a direction leading to the solution.

A score of 1: Very little progress towards the correct solution is shown.

A score of 0: Effectively no progress towards the solution is shown.

The instructor reserves the right to give a bonus point for exceptional work. The instructor also reserves the right to lower a score for lack of clarity in your solution, illegible writing, incomplete sentences, etc. For each assignment there will also be up to 10 ‘completion’ points as explained in class.

Quizzes: There will be quizzes given regularly (approximately weekly) in class. These will be short (approximately 15 minutes). Your lowest quiz grade will be dropped. No make-up quizzes will be given.

Exams: There will be one midterm exam. The midterm exam date and topics listed below are tentative and will be confirmed in class. You are responsible for being aware of any such changes announced in class. In the event that the exam is missed and (1) a valid, documented excuse (such as an illness or medical emergency) is given in writing to the instructor

at the time of the absence and (2) the student provides sufficient evidence to the instructor that he/she is keeping up with the topics in the course, a makeup exam will be arranged. The instructor will determine whether an excuse is valid.

Grading Policy: Homework = 40%
 Quizzes = 10%
 One midterm exam = 25%
 Final Exam = 25%

In general, 90%–100% = A, 80%–89% = B, 70%–79% = C, 60%–69% = D, below 60% = F with borderline cases (± 2 to 3%) for A–, B+, B–, C+, C–. I reserve the right to lower the curve, but will not raise the curve.

Course Outline:

Sections	Topics
Chapter 1 (1.1-1.8)	The Real Numbers and Limits of Sequences
Chapter 2 (2.1-2.4)	Continuous Functions
MIDTERM EXAM	<i>Chapters 1 & 2 (Tuesday, March 3)</i>
Chapter 3 (3.1-3.2)	Riemann Integral
Chapter 4 (4.1-4.3)	The Derivative
FINAL EXAM	<i>Chapters 1-4 (Tuesday, May 12, 1:30-4:15pm)</i>

Final Exam: The final exam will be a cumulative exam and must be taken at the scheduled time. Exceptions are allowed only with a Dean’s permission, by University rules.

Online class information, including assigned homework, will be posted periodically at <http://math.gmu.edu/~dmanders/WEBDAN/math315spring20.html>

Other Notes: 1. Please silence your cell phones during class. The interruptions caused by these are very distracting and will not be tolerated. 2. Plan to have all mobile devices turned off and stowed during quizzes and exams.

Honor Code: It is expected that each student in this class will conduct himself or herself within the guidelines of the Honor Code. All academic work should be done with the level of honesty and integrity that this University demands. Anyone caught cheating during a quiz, exam or on any other material submitted for grade will be sent to the University Honor Committee for formal resolution to the situation. The use of cell phones and other electronic communication devices for any purpose during a quiz or an exam will be considered an honor code violation. The most likely recommendation given by the professor to the Honor Committee is failure of the class (not just the specific quiz, exam, etc.) if the student is found guilty of violating the Honor Code.