

# MATH 4350: Advanced Calculus I

## Section CO1 — Fall 2020

### Instructor Information

*Name:* Dr. Anthony Gruber

*Office:* 315D

*Email:* anthony.gruber@ttu.edu

*Office Hours:* T/R 10-11 AM, R 1-2 PM, or by appointment.

### Class Information

*Dates:* Tuesdays and Thursdays

*Time:* 11:00 - 12:20 AM

*Classroom:* Zoom meeting ID 390 313 783

*Website:* <https://blackboard.ttu.edu>

*Textbook:* Introduction to Real Analysis (4<sup>th</sup> edition), Robert G. Bartle and Donald R. Sherbert

*Prerequisites:* MATH 2450, MATH 2360, and MATH 3310

### Course Description

This course covers sets, functions, vector fields, partial derivatives, power series, and theory of integration. Students are expected to read and write formal arguments i.e. “proofs”. Math 4350 and 4351 are writing intensive courses.

### Course Objectives

Students learn how to think and reason abstractly in the context of analysis of the real line, and learn how to write correct and clear mathematical arguments in this context. There will be a heavy emphasis on proofs, especially epsilon-delta proofs. Concepts and skills to be mastered by the students include but are not limited to:

- Suprema and infima.
- Limits of sequences.
- Continuity of functions.
- Derivatives of functions on the line.

### Methods of Learning Assessment

Graded assessment is done through homework, quizzes, and exams. Other assessment techniques include direct questioning, problems to be solved in class, and discussions during office hours.

**Homework:** Written homework will be assigned weekly, and due before class on Tuesdays. One homework assignment will be dropped. Late homework will not be accepted under any circumstances.

**Quizzes:** 15-minute quizzes will be given periodically at the start of class. These may be announced or unannounced, and each will count as much as 1/2 of a homework assignment.

**Exams:** There will be two in-class midterms, tentatively scheduled for the 7<sup>th</sup> and 13<sup>th</sup> weeks of the semester. There will also be a comprehensive final examination held at the end of the course. Missed exams can **only** be made up if there is a documented, university-approved reason.

### Grading

The final grade will be determined based on the following percentages.

Homework and Quizzes:	30%
Exam 1:	20%
Exam 2:	20%
Final Exam	30%

### Tentative Schedule

The following is a *tentative* schedule for the course.

Chapter	# Lectures
1	2
2	4-5
3	6-7
4	3-4
5	5-6
6.1-6.2	2-3

### Course and University Policies

**Attendance:** The faculty at Texas Tech University-Costa Rica requires prompt attendance at all class meetings. In other words, attendance in class is a universal requirement. Three unexcused absences will result in the reduction of the grade by one half grade. Two tardy arrivals are equivalent to one absence. Leaving classes early will also be taken as an absence unless previous written permission is given. Attendance will be taken each class, and used to determine letter grades in borderline cases.

**Academic Honesty (OP 34.12):** It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension. "Scholastic dishonesty" includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

**ADA Accommodation (OP 34.22):** Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as

possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note that instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 806-742-2405.

**Religious Holy Day Observance (OP 34.19):** "Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20. A student who intends to observe a religious holy day should make that intention known to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. A student who is excused may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

**Civility in the Classroom:** Texas Tech University endeavors to foster a classroom climate of mutual respect among students and between students and teacher. Mutual respect means that we should be tolerant of different ideas and varying opinions about topics of discussion in class, that we address each other respectfully and without interrupting while others are speaking, and that we do not engage in disruptive behavior in class. Signs of disrespect include, but are not restricted to: ringing cell phones (students must turn them off or leave them home), reading a newspaper or other material that is not part of a class assignment while in class, talking with classmates during class, eating and drinking in class\*\*\*, and similar disruptive behaviors. Students who engage in disruptive behavior will be warned. Repeated disruptive behavior may result in the student being asked to leave the classroom.

\*\*\* I do not mind if you eat/drink in class, but please be considerate about it.

### Important Dates and University Holidays

- Drop Deadline (no penalty): Sept. 9
- Independence Day: Sept. 14
- Withdrawal Deadline (academic penalty): Nov. 24
- Thanksgiving Holiday: Nov. 26-27
- Abolition of the Army: Nov. 30
- Final Exam: Dec. 8, 7:30-10:00 AM