

**MATHEMATICS 4350.002**  
**Advanced Calculus I**  
**Spring 2018**

**Professor:** Dr. Linda Allen; Office: Math 117-I; Mathematics Office Phone: 806-742-2580

**Office Hours:** Monday: 9 am–10 am; Tuesday and Thursday: 11 am–12 noon, 2 pm–3 pm, or by appointment.

**Class Meeting Time and Room:** Tuesday and Thursday: 12:30 pm.–2 pm, Math 10

**Course Website:** [www.math.ttu.edu/~linallen/Math4350Spring2018.html](http://www.math.ttu.edu/~linallen/Math4350Spring2018.html)

Please check the website regularly for the dates of assigned homework and quizzes.

**Prerequisite:** Math 2350 or 2450, Math 2360, and Math 3310

**Textbook:** *Introduction to Real Analysis*, 4th Ed. by Bartle and Sherbert

**Material Covered:**

Chapter 1 and Appendix B: Preliminaries; Finite and Countable Sets: 1.1-1.3

Chapter 2: The Real Numbers: 2.1-2.5

Chapter 3: Sequences and Series: 3.1-3.7

Chapter 4: Limits: 4.1-4.3

Chapter 5: Continuous Functions: 5.1-5.6

Chapter 6: Differentiation: 6.1-6.4

**Expected Learning Outcomes:** Students will 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, infima, limits of sequences, limits of functions, continuous functions, derivatives of functions on the line.

**Methods of Assessment of Learning Outcomes:** Continuous assessment of the progress of the course occurs through ongoing communication between the instructor and the students. Students are encouraged to ask questions during class and to seek the instructor's help outside of class when needed. Formal assessment occurs through exams, quizzes, oral and written homework assignments, and attendance.

**Exams:** Two exams will be given with the second exam during final exam week. No calculators are allowed on exams. No make-up of exams are given except for documented sickness, observance of religious holy day, or participation in a university-sponsored event.

**Quizzes:** A short quiz will be given approximately every two weeks. Quizzes will be based on assigned homework and material covered in class. No make-up of quizzes will be given.

**Written Homework Assignments:** Written homework assignments will be collected periodically. No late homework assignments will be accepted.

**Oral Homework Presentations:** Students will be given opportunities to present proofs to the class. Each student must present at least one proof.

**Attendance:** Class attendance is important. The lectures explain and complement the material in the text. A thorough understanding of the material is significantly improved by diligent class attendance. If you need to leave a class early, please inform your instructor before the class starts. Each student is responsible for all material covered in class.

**Course Grade:** The assessment of student progress will include: two exams (50%), quizzes (20%), written homework assignments (25%), oral homework presentations (5%), and attendance (borderline grades).

Exam	Date
Exam 1	Thursday, March 8
Exam 2	Tuesday, May 15 (1:30 pm–4 pm)

## Important Dates and Facts:

1. Friday, February 2, Last day of student-initiated drop **without** academic penalty
2. Monday-Friday, March 12-16, Spring Break
3. Wednesday, March 28, Last day of student-initiated drop **with** academic penalty
4. Monday, April 2, Easter Holiday
5. Tuesday, May 8, Last day of classes
6. **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.
7. **Academic Integrity:** Academic integrity is taking responsibility for ones own class and/or course work, being individually accountable, and demonstrating intellectual honesty and ethical behavior. Academic integrity is a personal choice to abide by the standards of intellectual honesty and responsibility. Because education is a shared effort to achieve learning through the exchange of ideas, students, faculty, and staff have the collective responsibility to build mutual trust and respect. Ethical behavior and independent thought are essential for the highest level of academic achievement, which then must be measured. Academic achievement includes scholarship, teaching, and learning, all of which are shared endeavors. Grades are a device used to quantify the successful accumulation of knowledge through learning. Adhering to the standards of academic integrity ensures grades are earned honestly. Academic integrity is the foundation upon which students, faculty, and staff build their educational and professional careers. [Texas Tech University (University) Quality Enhancement Plan, Academic Integrity Task Force, 2010]
8. **Student Absence for Observance of Religious Holy Day:** “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 in writing 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.
9. **Accommodation of Students with Disabilities:** 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 instructors office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.