

Fall 2023. MATH5332. Section 001.

Partial Differential Equations I

Instructor: Luan Thach Hoang

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Office hours: MWF 2:00 pm-3:00 pm

Classroom and Time: CMLL 101, MWF 1:00 pm - 1:50 pm.

Course website: <http://www.math.ttu.edu/~lhoang/2023Fall-M5332/>

Text: *Partial Differential Equations*, 2nd edition, by Lawrence C. Evans, published by American Mathematical Society.

Course Description: Basic theories of partial differential equations that include quasi-linear and linear first order equations, classification of PDE's, hyperbolic equations, elliptic equations, and parabolic equations.

Course Outline:

- Chapter 1: Introduction
- Chapter 2: Four Important Linear PDE
- Chapter 3: Non-linear First Order PDE (selected topics)
- Chapter 4: Other ways to Represent Solutions (selected topics)
- Chapter 5: Sobolev Spaces

Expected Learning Outcomes: Upon completion of this course, students should master concepts and theories of quasi-linear and linear first order partial differential equations, classification of partial differential equations, hyperbolic equations, elliptic equations, and parabolic equations.

Methods of Assessment of Learning Outcomes: Assessment of the learning outcomes will be achieved through homework assignments, two midterm exams, and a final exam.

Grading policy: Homework will be assigned weekly and will count for 30% of the grade. There will be two midterm exams in class, each will count for 20% of the grade. The final exam will count for 30% of the grade. All in-class exams are closed-book. No make-up exams are given unless legitimate documents for excuses are presented to the instructor at least a week in advance. Grading Scale: A: 90%-100%, B: 80%-89%, C: 70%-79%, D: 60%-69%, F: below 60%.

Attendance Policy: Students are expected to attend every class and are responsible for all information given in class.

Examination Schedule:

- Midterm 1: Monday, October 2, 2023.
- Midterm 2: Wednesday, November 8, 2023.
- FINAL EXAM: Monday, December 11, 2023, 1:30 p.m. - 4:00 p.m., Room CMLL 101.

Critical Dates:

- Aug. 24: Classes begin.
- Sep. 4: Labor Day. University holiday.

- Sep. 11: Last day for student-initiated drop on MyTech without academic penalty.
- Nov. 20: Last day for student-initiated drop on MyTech with academic penalty.
- Nov. 22-26: Thanksgiving holiday.
- Nov. 30-Dec. 6: No examinations.
- Dec. 5: Last day of classes.

TTU Policies. Texas Tech Policies Concerning Academic Honesty, Special Accommodations for Students with Disabilities, Student Absences for Observance of Religious Holy Days, and Statement of Accommodation for Pregnant Students may be found on Blackboard. Relevant Texas Tech policies can be found here:

- <https://www.depts.ttu.edu/tlpdc/RequiredSyllabusStatements.php>
- <https://www.depts.ttu.edu/tlpdc/RecommendedSyllabusStatements.php>

Some of the policies are below.

ADA accommodations. Any student who, because of a disability, may require some special arrangements in order to meet 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 instructors are not allowed to provide classroom accommodations to 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. "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 under Section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

Academic Integrity. Academic integrity is taking responsibility for one's 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.

Civility in the Classroom: Students are expected to assist in maintaining a classroom environment that is conducive to learning.

NOTE: When needed, the instructor will communicate with the students using their TTU email addresses. At the beginning of the semester, the instructor will send out a message to confirm the students' email addresses.

Handouts:

- [Syllabus](#)