

Fall 2020. MATH 3354 (Online).

Differential Equations

Optional Class Time: T 2-3:30 pm Central Time on Zoom

Course Information.

- **Instructor.** Hung Tran. Email address: hung.tran@ttu.edu.
- **Office hours.** By Appointment via Email.
- **Class webpage:** http://www.myweb.ttu.edu/tra97432/m3354_20.html Announcements will be updated there regularly.
- **Text.** *Differential Equations with Boundary-Value Problems*, 9th edition, by D.G. Zill.
- **Course Description.** This course covers topics in ordinary differential equations: First-order differential equations; Modeling with first-order differential equations; Higher-order differential equations; Modeling with higher-order differential equations; Laplace transform; Series solutions of Linear Equations.
- **Course Outline:** We will cover the following sections of the text: 1.1-1.2, 2.1-2.6, 3.1-3.2, 4.1-4.4, 4.6-4.7, 5.1, 6.1, 6.3, 7.1-7.5.
- **Important dates:** Last day to drop 11/24, Labor Day 09/07, Thanksgiving 11/25- 11/29, Exams 09/22, 10/27, 12/05.

Student Learning Outcomes. Students will obtain a thorough knowledge of solution techniques for first order and for second- and higher-order constant coefficient linear homogenous and nonhomogeneous initial value problems using standard methods of undetermined coefficients and variation of parameters. In addition, the students will acquire a general understanding of how to apply the Laplace transform in solving initial value problems and convolution integral equations. Students will gain an appreciation for some of the applications of ordinary differential equations in biology and engineering.

Assessment of Learning Outcomes. Assessment of the learning outcomes will be achieved through homework assignments, quizzes and exams. Homework will be given regularly through the Webwork system. In addition to two midterms and a final, there will be a quiz every two weeks. Homework is not accepted after the deadline. The final exam serves as make-up for exams that were missed for legal reasons. Make-up requests for the final with verifiable documentation of excuses must be submitted by 11/24.

Grade components.

Webwork 20% (drop the lowest), Quizzes 15% (drop the lowest), Midterms 2 x 20%, Final 30%. Note that the total includes a 5% bonus. Furthermore, class participation and discussion will be considered as additional bonus credits.

Grade scale: A 90%-100%, B 80%-89%, C 70%-79%, D 60%-69%, F below 60%.

Class Policy. Attendance is not required but highly recommended. Scientific studies show attendance is extremely important to get a good grade. It is an online class so students are responsible in managing their schedule. They are expected to read sections of the textbook, lecture notes and videos on the class website, ask questions during optional class hours, and complete assignments on a timely manner.

Final Exam: The final represents a course requirement. A student who did not complete the final exam, but otherwise completed all the other requirements successfully, cannot be assigned a passing letter grade.

Covid-19 Info: If you are ill and think the symptoms might be COVID-19-related:

- Call Student Health Services at 806.743.2848 or your health care provider.
- Self-report as soon as possible using the Dean of Students COVID-19 webpage. This website has specific directions about how to upload documentation from a medical provider and what will happen if your illness renders you unable to participate in classes for more than one week.
- If your illness is determined to be COVID-19-related, all remaining documentation and communication will be handled through the Office of the Dean of Students, including notification of your instructors of the period of time you may be absent from and may return to classes.

ADA accommodations (TTU Operating Policy 34.22). Any student who, because of a disability, may require some special arrangements 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 that instructors are not allowed to provide classroom accommodations to a student until appropriate verification has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 8067422405.

Absence for an observance of a religious holy day (TTU Operating Policy 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 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 Honesty (TTU Operating Policy 34.12). It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a 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 offence and renders the offenders liable to serious consequences, possibly suspension. “Scholastic dishonesty” includes, but it 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.