

**Spring 2017. MATH3350. Section 013.**

**Higher Mathematics for Engineers and Scientists I**

**Instructor:** Luan Thach Hoang

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Office hours: MWF 10:00 am - 11:00 am

**Classroom and Time:** MA 112, MWF 2:00 pm - 2:50 pm.

**Course website:** <http://www.math.ttu.edu/~lhoang/2017Spr-M3350/>

Updates about the course and other related announcements will be posted on this webpage.

**Prerequisite:** MATH 2350 or MATH 2450.

**Text:** *Advanced Engineering Mathematics*, by Dennis G. Zill and Warren S. Wright, 5th Revised Edition with online access, published by Jones & Bartlett (2014)

**Course Description:** This course covers topics in ordinary differential equations. Topics to be covered include: 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:**

- Chapter 1 - Introduction: Sections 1.1, 1.2
- Chapter 2 - First-Order Differential Equations: Sections 2.1-2.8
- Chapter 3 - Higher-Order Differential Equations: Sections 3.1-3.6 and 3.8
- Chapter 4 - Laplace Transforms: Sections 4.1-4.5
- Chapter 5 - Series Solutions of Linear Equations: Sections 5.1, 5.3
- Chapter 6 (Selected Topics) - Numerical Solutions of Ordinary Differential Equations: Sections 6.1-6.4

**Student Learning Outcomes:** Math 3350 students will study topics of differential equations, their solutions, and applications to physical sciences and engineering. In particular the students will learn to:

- recognize a differential equation and its solution
- compute solutions of first order differential equations
- compute solutions of higher order differential equations
- use Laplace transforms
- the fundamental properties of power series, and how to use them to solve linear differential equations

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

**Grading Policy:** Homework will be assigned daily and will count for 25% of the grade. The lowest homework score will be dropped. There will be three midterm exams in class, each will count for 15% 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%

**Homework Assignments:** Online homework will be assigned through Webwork. Students will receive the instructor's message for login information. Due dates are indicated on each assignment.

**Webwork Link:** <http://webwork.math.ttu.edu/webwork2/spr17hoangm3350s013>

**Attendance Policy:** Students must go to lectures and attendance will be taken. If you miss no more than four lectures, a bonus of three points will be added to your final grade.

**Calculators:** Only scientific calculators are allowed in exams. These calculators can calculate the values of the standard algebraic, trigonometric, exponential and logarithmic functions. Graphing calculators and calculators that can do symbolic manipulations are not allowed.

### **Examination Schedule:**

- Midterm 1: Wednesday, February 15, 2017
- Midterm 2: Wednesday, March 22, 2017
- Midterm 3: Friday, April 21, 2017
- FINAL EXAM: Friday, May 12, 2017, 1:30 p.m. - 4:00 p.m., Room MA 112.

### **Critical Dates:**

- Jan. 19: Classes begin.
- Feb. 3: Last day for student-initiated drop on MyTech without academic penalty .
- Mar. 11-19: Spring Break. No classes.
- Mar. 29: Last day for student-initiated drop on MyTech with academic penalty
- Apr. 17: No classes.
- May 4-10: No examinations.
- May 9: Last day of classes.

### **TTU OPs:**

ADA accommodations (TTU Operating Policy 34.22). 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 8067422405.

Absence for observance of a religious holy day (TTU Operating Policy 34.19). 1. "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. 2. 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. 3. 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 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.

**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 two special email messages. One is to confirm the students' email addresses, the other one is about Webwork. If a student does not receive those messages by the time of the second class, he/she must contact the instructor immediately.