Spring 2017. MATH3351. Section 001.

Higher Mathematics for Engineers and Scientists II

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

Classroom and Time: MA 016, M W F 1:00pm - 1:50pm.

Course website: *http://www.math.ttu.edu/~lhoang/2017Spr-M3351/*
Updates about the course and other related announcements will be posted on this webpage.

Prerequisite: MATH 3350 or MATH 3354.

Text: *Advanced Engineering Mathematics*, by Dennis G. Zill and Warren S. Wright, 5th Revised Edition with online access, published by Jones & Bartlett (2013)

Course Description: This course covers topics in linear algebra, systems of ordinary differential equations, Fourier series and solution of boundary value problems for partial differential equations. Topics to be covered include: Linear Algebra and Matrix Theory; Systems of linear first-order differential equations; Orthogonal Functions and Fourier Series; Boundary-Value Problems in Rectangular Coordinates; Boundary-Value Problems in Other Coordinate Systems.

Course Outline:

- Chapter 8 – (8.1-8.5, 8.8) Matrices

- Chapter 10 – (10.1, 10.2) Systems of Linear Differential Equations

- Chapter 12 – (12.1-12.4) Orthogonal Functions and Fourier Series

- Chapter 13 – (13.1-13.6, 13.8) Boundary-Value Problems Rectangular Coordinates

- Chapter 14 – (14.1-14.3) Boundary-Value Problems in Other Coordinate Systems

- Chapter 15 – (Selected Topics) Integral Transforms

Expected Learning Outcomes: The students will extend their knowledge of differential equations and their solutions acquired in MATH 3350 by developing new methods to solve differential equations and by studying the concept of partial differential equations and their solutions and applications. In particular, the students learn:

- about the fundamental properties of linear systems, and their solutions

- how to solve partial differential equations by separation of variables or Fourier series

- to apply these techniques to the three classical equations: the heat, wave, and Laplace's equation

- many examples of boundary value problems that appear in physical sciences and engineering

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 weekly 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 though Webwork. Students will receive the instructor's message for login information. Due dates are indicated on each assignment. Students should spend very first week to get familiar with the system.

Webwork Link: http://webwork.math.ttu.edu/webwork2/spr17lhoangm3351s001

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: Thursday, May 11, 2017, 1:30 p.m. - 4:00 p.m., Room MA 016.

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 806-742-2405.

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 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.