

Math 3351 -Spring 2023

Syllabus

Course: Mathematics 3351

Location/Time Tue, Thurs 11:00 AM-12:20 PM in MATH 012,

Descriptive: Title: Higher Mathematics for Engineers and Scientists II

Instructor: Jeffrey M. Lee Ph.D.

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Office Hours: 1:00:00-2:00 PM weekdays in MATH 239. Office hours are subject to possible change once the semester starts so check with the instructor.

Prerequisites: MATH 2350, 3350 or equivalent course.

[Sample Exam 1](#)

About the Course: The special sections of MATH 3350-3351 for EE/CMPE/EECS majors are intended to present the requisite mathematics for engineering courses in these disciplines in a timely manner.

Student Learning Outcomes: (3351) *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*
- *about Frobenius' Theorem and its applications*
- *many examples of Boundary Value Problems that appear in physical sciences and engineering*

Text: *Advanced Engineering Mathematics* Dennis G. Zill **Note:** We will actually be using the ebook version that comes with WebAssign,

WebAssign. We will be using the WebAssign online homework and ebook system by Cengage. You will receive instructions by email about how to obtain WebAssign and a class key you will need to register with the system.

Course Outline (3351)

Chapter 8 – (8.1-8.5, 8.8) Matrices	8 days (1 day 50 min)
Chapter 10 – (10.1, 10.2) Systems of Linear Differential Equations	4 days
Chapter 12 – (12.1-12.4) Orthogonal Functions and Fourier Series	6 days
Chapter 13 – (13.1-13.6, 13.8) Boundary-Value Problems Rectangular Coordinates	10 days
Chapter 14 – (14.1-14.3) BVP in Other Coordinate Systems	5 days
Chapter 15 – (Selected Topics) Integral Transforms	2 days
	35 days

Assessment: I will assess student progress and understanding using quizzes, verbal feedback, in class discussions, quizzes and examinations etc. The grading itself will be based solely on examinations, homework, quizzes and perhaps on attendance.

Examinations, Quizzes and Homework: There will be three midterm examinations each worth 100 points and a final exam worth a maximum of 150 points. Quizzes and Homework will combine to provide a possible 50 points (this can be very significant in the end!). Total possible points =500

Grading: Grading is based on the percent of possible points accumulated. 90% or greater will be an A for example.

Note: You must do at least 60% of the homework in order to pass the class and at least 80% to receive an A. Really, there is not reason not to do it ALL.

Class Attendance and makeup: Class attendance required and will be randomly checked. *If you miss more than 7 times without a documented excuse I may lower your letter grade. You have been warned.* No make-up exams or quizzes

will be given unless the absence is due to a university sanctioned event, severe/life threatening illness or hospitalization, circumstances beyond the control of the student such as serious traffic accident. In each case proper documentation should be provided and advanced notice given to the instructor when such is possible.

Academic Integrity: Cheating on any exam will result in the student receiving 0% credit for the exam and the student will be reported to the department chairperson or college dean. Text messaging during an examination will automatically be considered cheating as will using a calculator in inappropriate ways.

Civility in the Classroom: Please turn your cell phones off or to silent BEFORE entering the classroom and keep them out of sight at all times. I expect your full attention as I will give you mine when you are speaking. Do not read the newspaper in class. **In short, pay careful attention to what I am saying and writing in class. You may get an instant quiz over something just presented so ask question as we go along.**

Department Policies:

1. 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.

2. 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.

3. 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.

Covid information:

More Covid-19 Considerations: In the unfortunate event that we are forced to go online, the course will be administered via the Blackboard course website, Zoom, and email. You should check your email every day and also the Blackboard site. If we are converted to online, I plan to schedule Zoom sessions during the class meeting time. If we are converted to online, the percentage weights of the exams and homework may change; you will be informed.