Fall 2017

MATH 3351 - 002: Higher Mathematics for Engineers and Scientists II

Location: Biology 106

Professor: Dr. Aminur (Amin) Rahman; Office: Math 222; Email: amin.rahman@ttu.edu

Office hours: M,W,F 10am – 11am + by appointment

Course website: TBD
Prerequisites: Math 3350 or 3354
Textbook: Advanced Engineering Mathematics, 6th ed.

Tentative Schedule:

	Topics	Supplementary Homework
Week 1 (8/28, 8/30, 9/1)	8.1 – 8.6	8.1 # 14, 18, 21, 23, 26, 35, 42; 8.2 # 1, 5, 11, 12, 14; 8.4 # 13, 15, 19, 20; 8.6 # 1, 3, 4, 5, 27, 29
Week 2 (9/6, 9/8)	8.8, 10.1	8.8 # 1, 3, 5, 7, 10, 11, 13, 14, 21; 10.1 # 1, 3, 7, 11, 13, 17
Week 3 (9/11, 9/13, 9/15)	10.2, 11.1 – 11.2	10.2 # 1, 3, 5, 13, 14, 21, 31, 32, 34, 35
Week 4 (9/18, 9/20, 9/22)	11.3, Exam Review	Study for the exam.
Week 5 (9/25, 9/27, 9/29)	Exam 1, 12.1 – 12.2	12.1 # 1-3, 5, 6, 7-9, 11, 12, 21 – 26 12.2 # 1, 2, 3, 11, 12;
Week 6 (10/2, 10/4, 10/6)	12.2 – 12.3	12.3 # 1, 3, 5, 7, 8, 11, 12, 18, 24, 25, 26, 27, 32, 39-42
Week 7 (10/9, 10/11, 10/13)	12.5, 13.2	12.5 # 3, 4; p. 687 # 1-8, 11, 13, 16, 18;
Week 8 (10/16, 10/18, 10/20)	13.2	13.2 # 1-5, 7-9, 11;
Week 9 (10/23, 10/25, 10/27)	13.3	13.3 # 1, 3, 5, 8;
Week 10 (10/30, 11/1, 11/3)	13.4 – 13.5	13.4 # 1, 3, 6, 12;
Week 11 (11/6, 11/8, 11/10)	13.5 – 13.6	13.5 # 1, 2, 3, 4, 9; 13.6 # 1, 2, 7
Week 12 (11/13, 11/15, 11/17)	13.6, 13.8, Exam Review	Study for Exam.
Week 13 (11/20)	Exam II	 Think about what you're thankful for.
Week 14 (11/27, 11/29, 12/1)	14.1 – 14.2	TBD
Week 15 (12/4, 12/6)	14.3, Final Exam Review	Study for Final.

If time permits we will go over a few selected topics in Chapter 15

Course Grade: Quizzes (5%), Homeworks (25%), Exam I (20%), Exam II (20%), Final Exam (30%)
Tentative Curve: A: 88 – 100, B: 76 – 87, C: 63 – 75, D: 55 – 62, F: 0 – 54

Expected Learning Outcomes: Students will be able to carry out basic matrix operations for 2x2 matrices. Students will conduct stability analysis for autonomous 2-dimensional dynamical systems. Students will solve initial and boundary value problems for the Heat, Wave, and Laplace equations through the use of separation of variables and Fourier Series. If time permits, students will also take integral transforms. Furthermore, all of this will be done in the context of engineering and science applications.

Methods of Assessment of Learning Outcomes: Continuous assessment of the progress of the course occurs through ongoing communication between the instructor and the students. Students are encouraged to ask questions during class and to seek the instructor's help outside of class when needed. Formal assessment occurs through exams, quizzes, homework, computer assignments, and attendance. See descriptions below.

Other important information

Calculator Policy: No calculators allowed on Quizzes or Exams; permitted on homeworks.
Exams: In certain special circumstances a makeup exam may be given after the student follows all university protocol.
Quizzes: Short quizzes will be given throughout the semester.
Homeworks: Assigned weekly or bi-weekly
Programming: You will be expected to write MATLAB programs for certain homeworks.
Attendance: TTU considers attendance mandatory, and you may have no more than three unexcused absences during the semester, which I will enforce if your average falls bellow a C.

Important dates and university policies

1. September 4: Labor Day – university closed
2. September 13: Last day for student initiated drop without academic penalty
3. October 30: Last day for student initiated drop with academic penalty
4. November 22 – 26: Thanksgiving (No class Wednesday and Friday)
5. December 6: Last day of class
6. **Civility in the classroom:** Texas Tech University is a community of faculty, students, and staff that enjoys an expectation of cooperation, professionalism, and civility during the conduct of all forms of university business, including the conduct of student–student and student–faculty interactions in and out of the classroom. The classroom is a setting in which an exchange of ideas and creative thinking are encouraged and where intellectual growth and development are fostered. Students who disrupt this classroom mission by rude, sarcastic, threatening, abusive or obscene language and/or behavior are subject to appropriate sanctions according to university policy.
7. **Academic integrity:** 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.

8. **Observance of 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 in writing 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 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.
9. **Accommodation of students with disabilities:** Any student who, because of a disability, may require special arrangements in order to meet the 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 instructors office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.