

MECHANICAL ENGINEERING ANALYSIS I

MECE 3449-A, B, C, D
Spring 2017

TR 3:05-4:20 PM ACSB 2.110

TR 4:30-5:45 PM ACSB 2.120

TR 5:55-7:10 PM ACSB 2.146

MW 1:40-2:55 PM, Science Engr. & Tech. #41 1.508

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EPOB 1.104C TR 2-3 PM

Set B 1.508 MW 3-4 PM

Textbook

Kreyszig, E., Advanced Engineering Mathematics, 10th Ed., Wiley, 2011. [ISBN 978-0-470-45836-5]

Course Description

This course offers engineering students an in-depth look into the following topics: linear algebra including matrices, vectors, determinants, linear systems, and matrix eigenvalue problems; vector differential calculus and vector integral calculus, including integral theorems; complex numbers and functions including complex integration; and an introduction to probability and statistics.

Prerequisites

Credit with a minimum grade of a "C" MATH 2414 and/or concurrent enrollment in MECE 2350

Learning Objectives/Outcomes for the Course

1. Use linear algebra to solve problems of engineering systems that can be represented using linear systems of equations.
2. Solve eigenvalue problems including but not limited to vibration systems.
3. Utilize vector differential calculus to solve engineering problems like in thermo-fluid systems.
4. Make use of vector integral calculus including surface and volume integrals as applied in fluid and solid mechanics.
5. Employ complex numbers and functions as commonly used in the frequency domain analysis of dynamic responses.
6. Understand basic probability and its use in analysis of experimental data.
7. Understand basic statistics and its use in analyzing experimental data.
8. Use MATLAB or similar numerical software to aid in solving engineering problems using the Mathematical methods presented herein.

Grading Policies

Labs are a portion of the overall grade for Mechanical Engineering Analysis I Lecture (MECE 3449-01 & 02)

Labs: Will be completed during the lab session and will be submitted to the instructor before the end of the session. Labs be NOT be graded if submitted late, submit in advance of the end of the lab session. The instructor will be charge of any and all labs; administering, grading, etc.

Lab Policy

- Students can only attend the lab session in which they are registered.
- Do not use cell phones or the internet during the lab session or you will be asked to leave and will be unable to submit the lab.
- Take the lecture notes and examples to the lab as they will be helpful for solving any problems.
- Be on time to the lab; open Blackboard, MS Word, and MATLAB.
- Download and print the lab handout during the first minutes of the lab session.
- Complete your work and print it in an organized compact way on both sides of paper (not to use too much paper) and turn it in during the last 5 minutes of the lab session.
- Students need to leave the lab right after the lab session is over.

Departmental Attendance

- Attendance will be taken every time the class meets. Any student arriving to class 5 minutes after the class has started will not be allowed in class. Students will be allowed a maximum of three absences for the whole semester for classes meeting twice a week, two absences for classes meeting once a week, and one absence for laboratory courses. Five points will be deducted from the total (100%) for each absence exceeding the maximum allowable unless documentation justifying that absence is provided.
- Students will not be permitted to leave the classroom during lectures and exams except for extreme emergencies.

Calendar of Activities

The UTRGV academic calendar and final exam schedule can be found at <https://my.utrgv.edu/home> at the bottom of the screen, prior to login. Some important dates for Spring 2017 include:

Jan 16	MLK Holiday and Day of Service
Jan 17	First day of class for full semester
Jan 30	Last day to add a class for spring 2017 semester
Mar 13 – 18	Spring Break, NO classes
Apr 13	Last day to drop (DR grade) a class or withdraw (grade of W)
Apr 14 – 15	Easter holiday, no classes
May 3	Last day of classes for full semester
May 4	Study Day, NO classes
May 5 - 11	Final Exams (Schedule)

Drop Policy

Students can withdraw from a course through the Office of the Registrar on or prior to:

- January 30th, 2017, Last day to drop a class before it appears on the transcript and counts toward the “6-drop” limit. Last day to receive a 100% refund for dropped classes (other policies apply when a student is withdrawing from all classes).
- April 13th, 2017, Drop/Withdrawal Deadline; last day for students to drop the course and receive a “DR” grade. After this date, students will be assigned a letter grade for the course that will count on the GPA.

STUDENTS WITH DISABILITIES

If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus:** Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu. **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (<https://my.utrgv.edu/home>); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available:

Feb 15 – Feb 21 for Module 1 courses

Apr 12 – Apr 18 for Module 2 courses

Apr 12 – May 3 for full spring semester courses

ATTENDANCE

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

SCHOLASTIC INTEGRITY

As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE

In accordance with UT System regulations, your instructor is a "responsible employee" for reporting purposes under Title IX regulations and so must report any instance, occurring during a student's time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

COURSE DROPS

According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the "3-peat rule" and the "6-drop" rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.