Course Syllabus

ENGR 2300 Linear Algebra for Engineers

Fall 2022 Semester

Professor

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Course Detail on ENGR 2300 Linear Algebra for Engineers

- **Scope:** Matrices, vectors, linear systems of equations, Gauss-Jordan elimination, LU factorization and rank. Determinants and solutions of linear systems. Vector spaces, linear independence, basis, and change of basis. Linear transformations and matrix representation; similarity. Scalar products, orthogonality, Gram-Schmidt process, and QR factorization. Eigenvalues, eigenvectors, and diagonalization. Introduction to problem solving using MATLAB. This course includes a required Lab.

- **Course Learning Objectives:**
  1. Solve Ax=b for linear systems by elimination
  2. Determine bases and dimensions for the four fundamental subspaces
  3. Compute determinants and understand their properties
  4. Compute eigenvalues and eigenvectors
  5. Explore engineering applications that are built on concepts from linear algebra

- **Prerequisite:** MATH 2419 (Calculus II) or MATH 2414

- **Required Textbook:** "Elementary Linear Algebra" By Ron Larson, Cengage Learning, 7th Edition; www.cengage.com/c/elementary-linear-algebra-7e-larson/

- **Homework:** There will be weekly homework assignments for this course. No late homework submission will be allowed.
- **Tests/Exam:** There will be two tests (midterms) and a final exam. Tentative schedule:
  - Test 1: 5th week.
  - Test 2: 10th week.
  - Test 3/Final exam (inclusive): Last day of the class.

- **Grading Distribution:**

Test #1	25%
Test #2	25%
Test #3/Final Exam	30%
Small Project	5%
Homework and attendance	15%
Total	100%

Course Modality and Expectations

Instructional Mode	Traditional class room
Course Platform	Lectures will be delivered in class. However, depending on Covid-19 pandemic situation, some classes may be delivered via eLearning Blackboard Collaborate (Synchronous live sessions on Blackboard Collaborate).
Expectations	Regular attendance is expected. Zero tolerance for cheating in exams. Must abide by Comets Creed "As a Comet, I pledge honesty, integrity, and service in all that I do."

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.

Please see http://go.utdallas.edu/syllabus-policies.

Classroom Safety and COVID-19

To help preserve the University's in-person learning environment, UT Dallas recommends the following:

Adhere to the University's CDC Updated Guidelines issued on July 30, 2021. All Comets are strongly encouraged to wear face coverings indoors regardless of vaccination status.

Class Attendance

The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected regardless of modality. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes. These attendance requirements will not be used as part of grading (see Class Participation below for grading information).

In-person participation records may be used to assist the University or local public health authorities in performing COVID-19 occurrence monitoring. Please note – in-person attendance requires consistently adhering to University requirements, including wearing a face covering and other public safety requirements related to COVID-19, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Materials

The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Technical Requirements
In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

Course Access and Navigation
This course can be accessed using your UT Dallas NetID account on the eLearning website.

Please see the course access and navigation section of the Getting Started with eLearning webpage for more information.

To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources
Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Server Unavailability or Other Technical Difficulties
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Comet Creed
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources
The information contained in the following link lists the University's academic support resources for all students.

Please go to Academic Support Resources webpage for these policies.

UT Dallas Syllabus Policies and Procedures
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to UT Dallas Syllabus Policies webpage for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.