

Course Syllabus

Course Information

ENGR2300 Linear Algebra for Engineers, section -004
Spring 2025

Section	Lecture	Laboratory
-004	TuTh 2:30pm-3:45pm, ECSN 2.120	Th 12:00pm-12:50pm, JSOM 2.804

Instructor Contact Information

Dr. Matt Heins

Office: ECSN 4.608

Phone: 972-883-3846

Email: Matthew.Heins@utdallas.edu

Office Hours: To be announced

TA contact information: to be provided via e-learning

You must use your UTD accounts for emails. Please place ENGR2300-sec where “sec” is your section number in the subject line so I can prioritize your e-mail. I do not check e-learning messages

Expectations	Students are responsible for attending each course meeting, completing assignments and quizzes on time, and participating in any assigned peer-based activities.
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Course Pre-requisites, Co-requisites, and/or Other Restrictions

Pre- or Co-requisite: MATH 2414 or MATH 2419.

Course Description

Matrices, vectors, linear systems of equations, Gauss-Jordan elimination, LU factorization and rank. Vector spaces, linear dependence/independence, basis, and change of basis. Linear transformations and matrix representation; similarity, scalar products, orthogonality, Gram-Schmidt procedures, and QR factorization. Determinants: eigenvalues, eigenvectors, and diagonalization. Introduction to problem solving using MATLAB. This course includes a required laboratory.

Student Learning Objectives/Outcomes

1. Solve $Ax = b$ for linear systems by elimination
 2. Deduce basis and dimension for the four fundamental subspaces
 3. Compute determinants and understand its properties
 4. Compute eigenvalues and eigenvectors
 5. Explore engineering applications which build on the concepts of linear algebra presented in the course
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Required Textbooks and Materials

Required Textbook: *Elementary Linear Algebra, Eighth Edition, R. Larson, Cengage Learning, 2017, ISBN: 978-1-305-65800-4 (Hardcopy)*

You can choose the e-book or hardcopy (rent or buy) and you do not need WebAssign access. Please insure you select the 8th edition of the textbook.

Students will also use Matlab computer software to complete some assignments.

Students are responsible for accessing this software using a University license or a personal copy, see <https://atlas.utdallas.edu/TDCClient/30/Portal/KB/?CategoryID=98> for instructions. A scanner or scanning application is needed for uploading homeworks and supporting work for exams. Checkouts of computing equipment are available at the link: <https://oit.utdallas.edu/news/student-computer-checkout-availability/>

Assignments & Academic Calendar

Course Outline (chapters in course text referenced)

- Systems of Linear Equations: Chapter 1
- Matrices: Chapter 2
- Determinants: Chapter 3
- Vector Spaces: Chapter 4
- Inner Product Spaces: Chapter 5
- Linear Transformations: Chapter 6
- Eigenvalues and Eigenvectors: Chapter 7

Note: Course content is subject to change and may deviate from material in the textbook.

Grading Policy

Grade Weighting

In-class Quizzes: 10%

E-learning Quizzes: 5%

Homework Assignments: 15%

Capstone project: 10%

Exam 1 (Chp. 1/2/3): 20 % Tentative date: February 25th

Exam 2 (Chp. 4/5): 20 % Tentative date: April 10th

Exam 3(Chp. 6/7): 20 % Tentative date: May 8th

There is no final exam

Target Grading Scale: (The final scale is subject to change and will be determined by the instructor)

A+: >97%	B+: 87-90%	C+: 77-80%	D+: 67-70%	F: <60%
A: 93-97%	B: >83-87%	C: 73-77%	D: 63-67%	
A-: 90-92%	B-: >80-82%	C-: 70-72%	D-: 60-62%	

Students have one week after quiz or exam grades are posted to request a review with the instructor or TA. After one week no grading changes will be considered.

Course & Instructor Policies

Make-up Exams:

Make-up quizzes or exams must be approved in advance by the instructor. University policy will be adhered to regarding absences due to illness, religious holidays, etc. Planned absences should be communicated to the instructor as soon as possible.

Late Work:

Late work is not accepted without special circumstances and pre-approval by the instructor

Extra Credit:

No individual assessment “re-takes” or assignments will be given to allow to students to improve upon the final course grade.

Class Citizenship:

Students are expected to participate in the course as prescribed by the instructor and maintain a professional decorum in all classroom and virtual meetings.

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.”

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, including COVID-19 resources and policies

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

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.

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.

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