

Course Syllabus

Course Information

ENGR 2300.001, ENGR 2300.004 and ENG 2300.006

Linear Algebra for Engineers, Fall 2016

Section	Lectures			Labs		
	Days	Time	Location	Day	Time	Location
001	M, W	1.00-2.15 pm	ECSN 2.110	M	11.00-11.50 am	JSOM 2.714
004	M, W	4.00-5.15 pm	ECSN 2.112	W	5.30-6.20 pm	ATC 1.305
006	T, Th	4.00-5.15 pm	JSOM 2.115	T	10.00-10.50 am	JSOM 2.714

Professor Contact Information

Dr. Peter Blakey

Telephone: (972) 883-6771

Email: pab120030@utdallas.edu

(Please include your section number in the title line of any emails.)

Office: ECSN 3.922

Office Hours: Tuesdays, 2.30 - 3.30 pm, Wednesdays 2.30 pm – 3.30 pm, and by appointment

Course Pre-requisites, Co-requisites, and/or Other Restrictions

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

Credit cannot be received for both courses: ENGR 2300 and MATH 2418.

Catalog Description

Linear Algebra for Engineers (3 semester credit hours)

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.

Course Learning Objectives

Students will be able to:

- Solve $\mathbf{Ax} = \mathbf{b}$ for linear systems by elimination
- Deduce basis and dimension for the four fundamental subspaces
- Compute determinants and understand their properties
- Compute eigenvalues and eigenvectors
- Explore engineering applications that build on the concepts of linear algebra presented in the course

Required Textbook

Lipschutz, Beginning Linear Algebra, Schaum's Outline Series, 1997, ISBN: 0-07-038037-6

Students will access online text books and videos that will be available through eLearning.

Assignments & Academic Calendar

Weekly Homework Assignments

Readings and Videos

Mathematical Problem Sets

MATLAB Programming Exercises

Written Deliverables:

MATLAB Competency Portfolio – due dates tba

Independent Learning Report – due dates tba

MATLAB Team Project Report - due dates tba

Exams:

Midterm #1 – Matrix Algebra – dates tba

Midterm #2 – Vector Spaces - dates tba

Final Exam – Comprehensive – dates tba

Grading Policy

Exams – 40%

Written Deliverables – 30%

Homework Assignments – 20%

Attendance, Participation and Professionalism – 10%

(No penalty for up to two unexcused absences during the semester.)

Course & Instructor Policies

The use of cell phones, laptop computers or other electronic devices is not permitted during lectures, except to accommodate disabilities, or with the permission of the professor. Laptop computers may be used for class-related purposes during problem sessions.

Late work is not accepted unless prior arrangements are made with the professor. No makeup exams or incompletes are available, except under circumstances that are urgent and unforeseeable. There are no opportunities for extra credit.

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.

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

Course Evaluation

Students in the UT System are required to complete online evaluations of every course they take that has an enrollment of five or more students. Students who complete course evaluations have priority access to course grades, after grades have been submitted to the registrar. Students who do not complete course evaluations do not have access to course grades until the “Final Grades Viewable Online” date listed in the academic calendar.

During the evaluation process students are asked about the extent to which they agree or disagree with the following statements:

1. The instructor clearly defined and explained the course objectives and expectations.
2. The instructor was prepared for each instructional activity.
3. The instructor communicated information effectively.
4. The instructor encouraged me to take an active role in my own learning.
5. The instructor was available to students either electronically or in person.

If, during the semester, a student does not ‘agree’ or ‘strongly agree’ with these statements, they are invited to raise their concerns with the professor.

Descriptions and timelines contained in this syllabus are subject to change at the discretion of the professor.