



IEEM 2010 Linear Algebra Syllabus, Spring 2023

Language:

The syllabus, textbooks, lecture notes, exercises, and quiz/exam questions are **in English**. **The lectures will mainly be offered in oral English but Chinese explanations will also be provided.**

Course Descriptions:

A required math course for the sophomore in the IEEM department. The following contents will be covered:

Matrices

Gauss Elimination

Vector Spaces

Solving $Ax=0$ and $Ax=b$

Orthogonal vectors

Projections

Least squares

Basis

Gram-Schmidt Process

Eigenvalues and Eigenvectors

Minima, maxima, and saddle points

Test for PSD

SVD (singular value decomposition)

Course Objective:

Learn linear algebra as the foundation of the later courses about operations research, data analytics, systems, and industrial engineering.

Class meetings:

Tuesdays 10:10AM-12:00Noon,

Thursdays 11:10AM-12:00Noon

Instructor:

Yu-Ching Lee, ycllee@ie.nthu.edu.tw, 714 Engineering Building I. Office Hour: By appointment

Course Website(s):

<https://sites.google.com/view/linearalgebracoursewebsite/home/course-information?authuser=0>

Grading Weight:

Homework 20%; Quizzes and Midterms 40%; Final 40%.

Homework Policies:

- Electronic submission - No late homework is accepted.

Exam Format: Computational.

Exam Policies:

- Closed book
- Engineering calculator and English dictionary is allowed.
- The use of cell phones, smart phones, laptops, and other electronic devices are prohibited during the exams.
- Discussing the answers to the questions during the exams is prohibited.

Tentative Weekly Course Contents:

Check the course website for the course materials and calendar of last year