COURSE DETAIL

LINEAR ALGEBRA II
Country Korea, South
Host Institution Yonsei University
Program(s) Yonsei University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mathematics
UCEAP Course Number 111
UCEAP Course Suffix
UCEAP Official Title LINEAR ALGEBRA II
UCEAP Transcript Title LINEAR ALGEBRA II
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

This course is the second course in a two semester sequence for the sophomore/junior level undergraduate linear algebra. It helps students understand the abstraction of linear algebra. Linear Algebra is a basic language in mathematics and has many applications in every branch of mathematics. The course covers all the topics such as vector spaces and linear transformations, matrix algebra and analysis, inner product and normed spaces in linear algebra commonly used by analysts, combinatorists, computer scientists, geometers, logicians, number theorists, or topologists. The major goals are: to develop a systematic knowledge of the elements of linear algebra, and the ability to apply the concepts covered in classes; Fields and Vector Spaces, Linear Operators, Determinants and Eigenvalues, The Jordan Canonical Form, Orthogonality, Spectral Theory, Singular Value Decomposition, Matrix Factorization, and Infinite Dimensional Vector Spaces; to understand the elements of linear algebra with an emphasis on concepts, methods of proof, and the communication of mathematical ideas; to see how all these play a key role in many practical applications in today's technological society; Various applications of linear algebra show how linear algebra is essential not only in solving problems involving algebra, geometry, differential equations, optimization, approximation, combinatorics, but also in the fields such as biology, economics, computer graphics, electrical engineering, cryptography, political science as well as sciences; to broaden students' horizons by learning connections of one subject to other areas of linear algebra and mathematics and by mentioning results at the forefront of research.

Textbook: Mark S. Gockenbach, "FINITE-DIMENSIONAL LINEAR ALGEBRA"

Assessment: Midterm (30%), Final (50%), Attendance & Presentations (10%), Homework, Assignments, Quizzes & Class Activity (10%)

Prerequisite: Calculus, Linear Algebra I

Language(s) of Instruction
English

Host Institution Course Number MAT3120
Host Institution Course Title LINEAR ALGEBRA II
Host Institution Campus
Host Institution Faculty
Host Institution Degree
Host Institution Department Mathematics

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