COURSE DETAIL

MATRIX ALGEBRA AND APPLICATIONS

Country
Hong Kong

Host Institution
Hong Kong University of Science and Technology (HKUST)

Program(s)
Hong Kong Summer, HKUST

UCEAP Course Level
Lower Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
21

UCEAP Course Suffix
S

UCEAP Official Title
MATRIX ALGEBRA AND APPLICATIONS

UCEAP Transcript Title
MATRIX ALGEBRA

UCEAP Quarter Units
4.50

UCEAP Semester Units

3.00

Course Description

This course introduces matrix algebra and its applications. Key topics include: systems of linear equations; linear transformations; matrix representation of linear transformations; linear operators, eigenvalues and eigenvectors; similarity invariants and canonical forms, and inner product spaces, elementary matrices, determinants and its properties, Cramer's Rule and inverse formula, areas and volumes, vector spaces and subspaces, subspaces associated with matrices, linear independent sets and bases, coordinate systems and dimension, orthogonality and orthonormal sets, orthogonal projections and Gram-Schmidt process, least square solutions and applications. Text: David C. Lay, LINEAR ALGEBRA AND ITS APPLICATIONS. Assessment: homework (10%), midterm exam (30%), final exam (60%).

Language(s) of Instruction
English

Host Institution Course Number
MATH2111

Host Institution Course Title
MATRIX ALGEBRA AND APPLICATIONS

Host Institution Course Details

Host Institution Campus
HKUST International Summer School

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

Course Last Reviewed
2023-2024

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