COURSE DETAIL

LINEAR ALGEBRA II

Country
Singapore

Host Institution
National University of Singapore

Program(s)
National University of Singapore

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
112

UCEAP Course Suffix
B

UCEAP Official Title
LINEAR ALGEBRA II

UCEAP Transcript Title
LINEAR ALGEBRA II

UCEAP Quarter Units
6.00

UCEAP Semester Units

4.00

Course Description

This course is a continuation of MA1101 Linear Algebra I. The course presents more advanced topics and concepts in linear algebra. A key difference from MA1101 is that there is a greater emphasis on conceptual understanding and proof techniques than on computations. Major topics: matrices over a field; determinant; vector spaces; subspaces; linear independence; basis and dimension; linear transformations; range and kernel; isomorphism; coordinates; representation of linear transformations by matrices; change of basis; eigenvalues and eigenvectors; diagonalizable linear operators; Cayley-Hamilton Theorem; minimal polynomial; Jordan canonical form; inner product spaces; Cauchy-Schwartz inequality; orthonormal basis; Gram-Schmidt Process; orthogonal complement; orthogonal projections; best approximation; adjoint of a linear operator; normal and self-adjoint operators; orthogonal and unitary operators.

Language(s) of Instruction
English

Host Institution Course Number
MA2101

Host Institution Course Title
LINEAR ALGEBRA II

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

Course Last Reviewed
2022-2023

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