COURSE DETAIL

INTRODUCTION TO NUMERICAL ANALYSIS

Country
United Kingdom - England

Host Institution
Imperial College London

Program(s)
Imperial College London

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
150

UCEAP Course Suffix

UCEAP Official Title
INTRODUCTION TO NUMERICAL ANALYSIS

UCEAP Transcript Title
NUMERICAL ANALYSIS

UCEAP Quarter Units
5.00

UCEAP Semester Units
3.30

Course Description

This applied analysis course leads to an introduction to some of the standard algorithms in numerical analysis. Students explore orthogonality, alongside inner/outer products on Rn; linear dependence/independence; orthogonal/orthonormal vectors; classical Gram-Schmidt; orthogonal matrices; Givens rotations, QR factorization, and Cauchy-Schwartz inequality. The course also covers gradients/Hessians, exploring Taylor series for f: Rn à? R; classification of stationary points; positive definite matrices; generalized inner products on Rn; and Cholesky factorization of symmetric positive definite matrices.

Language(s) of Instruction

English

Host Institution Course Number

M2AA3

Host Institution Course Title

INTRODUCTION TO NUMERICAL ANALYSIS

Host Institution Campus

Imperial College London

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mathematics

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