COURSE DETAIL

NUMERICAL ANALYSIS I

Country
Ireland

Host Institution
University of Galway

Program(s)
University of Galway

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
112

UCEAP Course Suffix

UCEAP Official Title
NUMERICAL ANALYSIS I

UCEAP Transcript Title
NUMERICL ANALYSIS 1

UCEAP Quarter Units
4.00

UCEAP Semester Units
2.70

Course Description
This course emphasises the mathematics used to design numerical methods, and to analyze their properties. Students also experiment with implementing algorithms in MATLAB/Octave. The course covers Newton's method and other techniques for solving nonlinear equations; Runge-Kutta methods; numerical methods for solving systems of linear equations and their analysis, including the role played by matrix norms; and estimation of eigenvalues and eigenvectors (power method, Rayleigh quotient and Gerschgorin's circles). Various applications of these methods are presented, including financial modeling, and generating fractals.

Language(s) of Instruction
English

Host Institution Course Number
MA385

Host Institution Course Title
NUMERICAL ANALYSIS I

Host Institution Course Details
http://www.maths.nuigalway.ie/~niall/MA385/

Host Institution Campus
National University of Ireland, Galway

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

Course Last Reviewed
2019-2020

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