COURSE DETAIL

INTRODUCTION TO NUMERICAL ANALYSIS

Country
Norway

Host Institution
University of Oslo

Program(s)
University of Oslo

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
103

UCEAP Course Suffix

UCEAP Official Title
INTRODUCTION TO NUMERICAL ANALYSIS

UCEAP Transcript Title
INTRO NUM ANALYSIS

UCEAP Quarter Units
8.00

UCEAP Semester Units
5.30

Course Description

This course gives insight into theory and algorithms for fundamental mathematical problems associated with systems of equations, optimization, and approximation of functions. There are many applications, for example, the representation of geometry, images, and more generally large data sets. Applications in various areas of the natural sciences are an essential part of the course. This subject assumes familiarity with linear algebra and calculus of several variables. The course discusses topics including important numerical methods; strategies both for constructing methods and analyzing them, often with the help of linear algebra; the limitations of various mathematical approximations and the effect of computer rounding errors; concrete methods for solving various kinds of equation systems and non-linear optimization problems; and methods for approximating functions with the help of simpler functions, such as polynomials, piecewise polynomials, and trigonometric functions.

Language(s) of Instruction
English

Host Institution Course Number
MAT3110

Host Institution Course Title
INTRODUCTION TO NUMERICAL ANALYSIS

Host Institution Campus
Mathematics and Natural Sciences

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

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