COURSE DETAIL

INTRODUCTION TO HIGHER ANALYSIS

Country Sweden

Host Institution Lund University

Program(s) Lund University

UCEAP Course Level Upper Division

UCEAP Subject Area(s) Mathematics

UCEAP Course Number

144

UCEAP Course Suffix

UCEAP Official Title INTRODUCTION TO HIGHER ANALYSIS

UCEAP Transcript Title INTR HIGH ANALYSIS

UCEAP Quarter Units 6.00

UCEAP Semester Units 4.00

Course Description

The course covers properties of the real numbers R: completeness axiom, Cauchy sequences, cardinality of rational, and irrational numbers; Topology in Rn: open and closed sets, p-norms, convergence, compactness, the Bolzano-Weierstrass theorem, and connected sets; Continuous functions in Rn: intermediate value theorem, min-max theorem, uniform continuity, continuity of inverse functions, implicit function theorem; Convergence of sequences and series of functions: pointwise, absolute, and uniform convergence, term wise differentiation and integration, power series; and examples of applications to selected topics relevant to mathematical research at the center for mathematical sciences. Admission to the course requires at least 30 credits in mathematics including knowledge corresponding to MATA31 Analysis in One Variable, 15 credits, MATA32 Algebra and Vector Geometry, 7.5 credits and NUMA01 Computational Programming with Python, 7.5 credits.

Language(s) of Instruction English

Host Institution Course Number MATB33

Host Institution Course Title INTRODUCTION TO HIGHER ANALYSIS

Host Institution Campus

Lund

Host Institution Faculty Science

Host Institution Degree

Host Institution Department

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