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 Course Details
https://kursplaner.lu.se/pdf/kurs/en/MATB33

Host Institution Campus
Lund

Host Institution Faculty
Science

Host Institution Degree

Host Institution Department

Course Last Reviewed
2024-2025

Print