COURSE DETAIL

INTRODUCTION TO MATHEMATICAL ANALYSIS

Country
Hong Kong

Host Institution
University of Hong Kong

Program(s)
University of Hong Kong

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
106

UCEAP Course Suffix

UCEAP Official Title
INTRODUCTION TO MATHEMATICAL ANALYSIS

UCEAP Transcript Title
MATH ANALYSIS

UCEAP Quarter Units
5.00

UCEAP Semester Units
3.30

Course Description

This course introduces basic ideas and techniques of mathematical analysis. Topics: the real number system: the real numbers as an ordered field, supremum and infimum, the completeness axiom, denseness of the rational numbers; sequences and series of real numbers: limits of sequences, properties of convergent sequences, monotone sequences and Cauchy sequences, subsequences, series, tests of convergence for series; continuity of real-valued functions: properties of continuous functions, the extreme value theorem, the intermediate value theorem, uniform continuity, limits of functions; differentiation: properties of differentiable functions, the mean value theorem, Taylor's theorem and its applications; integration: construction of the Riemann integral using Darboux sums and Riemann sums, the fundamental theorem of calculus. Text: Kenneth A. Ross, ELEMENTARY ANALYSIS; THE THEORY OR CALCULUS. Assessment: coursework (50%), final exam (50%).

Language(s) of Instruction
English

Host Institution Course Number
MATH2241

Host Institution Course Title
INTRODUCTION TO MATHEMATICAL ANALYSIS

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

Print