

# COURSE DETAIL

## ANALYSIS

**Country**

Australia

**Host Institution**

University of Sydney

**Program(s)**

University of Sydney

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Mathematics

**UCEAP Course Number**

106

**UCEAP Course Suffix****UCEAP Official Title**

ANALYSIS

**UCEAP Transcript Title**

ANALYSIS

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

4.00

## Course Description

This course examines the field of mathematical analysis both with a careful theoretical framework as well as selected applications. It shows the utility of abstract concepts and teaches an understanding and construction of proofs in mathematics. The course starts with the foundations of calculus and the real numbers system. It goes on to study the limiting behavior of sequences and series of real and complex numbers. This leads naturally to the study of functions defined as limits and to the notion of uniform convergence.

Returning to the beginnings of calculus and power series expansions leads to complex variable theory: elementary functions of complex variable, the Cauchy integral theorem, Cauchy integral formula, residues and related topics with applications to real integrals.

### Language(s) of Instruction

English

### Host Institution Course Number

MATH2023

### Host Institution Course Title

ANALYSIS

### Host Institution Campus

sydney

### Host Institution Faculty

### Host Institution Degree

### Host Institution Department

Mathematics

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