

# COURSE DETAIL

## MATHEMATICAL METHODS

**Country**

Netherlands

**Host Institution**

Utrecht University - University College Utrecht

**Program(s)**

University College Utrecht

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Mathematics

**UCEAP Course Number**

110

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

MATHEMATICAL METHODS

**UCEAP Transcript Title**

MATHEMATIC METHODS

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

4.00

## Course Description

Mathematics is at the same time a conceptual framework, a collection of proven theorems, and a toolbox. In this course, students encounter all three of these aspects by studying one of the central mathematical issues for applications in science and engineering. The general topic of the course is the solution of linear partial differential equations using the separation of variables, Fourier series, and Fourier transforms. The study involves both computational and rigorous mathematical aspects. While the actual computation of solutions is the main objective, students also learn the mathematical theorems establishing the validity and limitation of the different methods. Interested students are also offered the possibility to experiment with numerical approaches. In addition to the contact hours, each student is expected to work nine hours a week on the course. This time should be devoted to reviewing the material of the preceding lecture; finishing the exercises started in the preceding problem session; preparing exercises to hand in; studying the corrections of the previously returned hand-in problems and making sure everything is clear. Entry Requirements: Calculus and Linear Algebra.

### Language(s) of Instruction

English

### Host Institution Course Number

UCSCIMAT21

### Host Institution Course Title

MATHEMATICAL METHODS

### Host Institution Campus

University College Utrecht

### Host Institution Faculty

Science

### Host Institution Degree

**Host Institution Department**

Mathematics

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