

## COURSE DETAIL

### ANALYSIS I AND LINEAR ALGEBRA

**Country**

Germany

**Host Institution**

Technical University Berlin

**Program(s)**

Technical University Berlin

**UCEAP Course Level**

Lower Division

**UCEAP Subject Area(s)**

Mathematics Engineering

**UCEAP Course Number**

51

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

ANALYSIS I AND LINEAR ALGEBRA

**UCEAP Transcript Title**

ANALYS I & LIN ALG

**UCEAP Quarter Units**

14.00

**UCEAP Semester Units**

9.30

## Course Description

This course covers the following topics: sets and mappings, complete induction; number representations, real numbers, complex numbers; number sequences, convergence, infinite series, power series, limits and continuity of functions; elementary rational and transcendental functions; differentiation, extreme values, mean value theorem and consequences; higher derivatives, Taylor polynomial and series; applications of differentiation; definite and indefinite integral, integration of rational and complex functions, improper integrals, Fourier series; matrices, linear systems of equations, Gauss algorithm; vectors and vector spaces; linear mappings; dimension and linear independence; matrix algebra; vector geometry; determinants, eigenvalues; linear differential equations.

### Language(s) of Instruction

German

### Host Institution Course Number

3236 L 002/7

### Host Institution Course Title

ANALYSIS I AND LINEAR ALGEBRA

### Host Institution Campus

### Host Institution Faculty

### Host Institution Degree

### Host Institution Department

Institut für Mathematik

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