Summary
The course studies fundamental concepts of analysis and the calculus of functions of several variables.

Content
- The Euclidean space $\mathbb{R}^n$.
- Vector functions and curves
- Differentiation of functions of several variables.
- Multiple integrals
- Ordinary differential equations.

Keywords
Euclidean vector space, partial derivative, differential, Jacobian, Hessian, Taylor expansion, gradient, chain rule, implicit function theorem, Lagrange multipliers, multiple integrals, ordinary differential equation

Learning Prerequisites
- Required courses
  Analysis I, Linear Algebra I

Important concepts to start the course

Learning Outcomes
- The goal of this course consists as for Analysis 1 is that students acquire the following capacities:
  - Consolidate the skills and knowledge they acquired in Analysis 1.
  - Reason rigorously and to analyse problems.
  - Choose appropriate analytical tools for problem solving.
  - Conceptualize problems.
• Apply efficiently mathematical concepts for problem solving by means of examples and exercises
• Analyze and to solve new problems.
• Master the basic tools of analysis
• Master the basic tools of elementary ordinary differential equations, the Euclidean space $\mathbb{R}^n$ and functions of several variables

Teaching methods
Ex cathedra lectures, exercises sessions in the classroom.

Assessment methods
Written exam

Supervision
Office hours No
Assistants Yes
Forum No
Others Tutoring of exercises
other measures to be defined

Resources
Bibliography

Websites
• http://mcss.epfl.ch/page-105207-en.html