MATH-106(en) **Analysis II (English)**

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Cursus	Sem.	Type
Chemistry and chemical engineering	BA2	Obl.
Civil Engineering	BA2	Obl.
Communication systems	BA2	Obl.
Computer science	BA2	Obl.
Electrical and Electronical Engineering	BA2	Obl.
Environmental Sciences and Engineering	BA2	Obl.
Life Sciences Engineering	BA2	Obl.
Materials Science and Engineering	BA2	Obl.
Mechanical engineering	BA2	Obl.
Microtechnics	BA2	Obl.

Language of teaching	English
Coefficient	6
Session	Summer
Semester	Spring
Exam	Written
Workload	180h
Weeks	14
Hours	**6 weekly**
Courses	4 weekly
Exercises	2 weekly
Number of positions	**230**

Summary

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

Content

-The Euclidean space 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

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Learning Outcomes

- Apply the skills and knowledge they acquired in Analysis 1.
- Reason rigorously and analyse problems
- Develop appropriate analytical tools for problem solving.
- Analyze efficiently mathematical concepts for problem solving by means of examples and exercises

Teaching methods

lectures, exercises sessions in the classroom.

Assessment methods

Written exam

Supervision

Office hours	No
Assistant.e.s	Yes
Forum	Yes

Resources

Bibliography

Jacques Douchet and Bruno Zwahlen: Calcul différentiel et intégral. PPUR, 2011.

Ressources en bibliothèque

- Retrouver les références à la Bibliothèque

Moodle Link

- https://go.epfl.ch/MATH-106_en