

MATH-203(a) Analysis III (for SV, MT)

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Cursus	Sem.	Type
HES - MT	H	Obl.
Life Sciences Engineering	BA3	Obl.
Microtechnics	BA3	Obl.

Language of teaching	English
Credits	4
Session	Winter
Semester	Fall
Exam	Written
Workload	120h
Weeks	14
Hours	4 weekly
Courses	2 weekly
Exercises	2 weekly
Number of positions	

Summary

This course teaches the fundamental concepts of vector analysis and Fourier analysis for the resolution of multidisciplinary problems in science and engineering.

Content

Vector analysis

Gradient, curl, divergence, and Laplacian operators. Integrals on curves and surfaces. Vector fields and potentials. Green's, divergence, and Stokes' theorems.

Fourier analysis

Fourier series. Parseval identity. Fourier transforms. Plancherel identity. Use and applications.

Learning Outcomes

By the end of the course, the student must be able to:

- Analyze the ideas, concepts, and methods taught during the theory lessons.
- Apply the ideas, concepts, and practical methods taught in the exercise series.

Teaching methods

Ex-cathedra theory lectures and practical sessions supervised by assistants.

Assessment methods

Written exam.

Supervision

Office hours	No
Assistants	Yes
Forum	Yes

Prerequisite for

Analyse IV.