

MATH-251(b) **Numerical analysis**

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Cursus	Sem.	Type
Chemistry	BA6	Opt.
Electrical and Electronical Engineering	BA4	Obl.
HES - EL	E	Obl.
Materials Science and Engineering	BA4	Obl.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	Written
Workload	120h
Weeks	14
Hours	4 weekly
Lecture	2 weekly
Exercises	2 weekly
Number of positions	

Summary

The students will learn key numerical techniques for solving standard mathematical problems in science and engineering. The underlying mathematical theory and properties are discussed.

Content

The topics covered include:

- Linear and non-linear systems of equations
- Matrix factorisations and decompositions
- Numerical differentiation and integration
- Numerical solution of differential equations
- Regression and least squares problems

Assessment methods

Written

Resources**Moodle Link**

- https://go.epfl.ch/MATH-251_b