MATH-207(d) **Analysis IV**

Licht Martin Werner

Cursus	Sem.	Type
Chemistry	BA6	Opt.
Civil Engineering	BA4	Obl.
Communication systems	BA4	Opt.
Computer science	BA4	Opt.
Environmental Sciences and Engineering	BA4	Obl.
HES - SIE	E	Obl.

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

Summary

The course studies the fundamental concepts of complex analysis and Laplace analysis with a view to their use to solve multidisciplinary scientific engineering problems.

Content

Complex analysis
- Definitions and examples of complex functions.
- Holomorphic functions.
- Cauchy-Riemann equations.
- Complex integrals and Cauchy formulas.
- Laurent series.
- Residue theorem.

Laplace analysis
- Laplace transforms.
- Applications to ordinary differential equations.
- Applications to partial differential equations.

Learning Prerequisites

Required courses

Linear algebra, Analysis I, Analysis II, Analysis III

Assessment methods

Written exam

Resources

Moodle Link

- https://go.epfl.ch/MATH-207_d