

MATH-203(d) **Analysis III (for IC)**

Licht Martin Werner

| Cursus | Sem. | Type |
|-----------------------|------|------|
| Communication systems | BA3 | Obl. |
| Computer science | BA3 | Obl. |
| HES - IC | H | Obl. |

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|----------------------------|-----------------|
| Language of teaching | English |
| Credits | 6 |
| Session | Winter |
| Semester | Fall |
| Exam | Written |
| Workload | 180h |
| Weeks | 14 |
| Hours | 5 weekly |
| Lecture | 3 weekly |
| Exercises | 2 weekly |
| Number of positions | |

Summary

The course studies the fundamental concepts of vector analysis and Fourier analysis with a view to using them to solve multidisciplinary scientific engineering problems.

Content

Vector analysis:

Gradient, rotational, divergence and Laplacian operators. Curvilinear integrals and surface integrals. Vector fields and potentials. Green's, divergence and Stokes' theorems.

Fourier analysis:

Fourier series. Parseval identity. Fourier transforms. Plancherel's identity. Uses and applications.

Learning Prerequisites**Required courses**

Analyse I, Analyse II, Algèbre linéaire.

Assessment methods

Written exam.

Resources**Moodle Link**

- https://go.epfl.ch/MATH-203_d