EPFL

ENV-614 | **Fourier analysis and boundary value problems**

Rinaldo Andrea

Cursus	Sem.	Type
Civil & Environmental Engineering		Obl.
Mechanics		Opt.

Language of teaching	English
Credits	4
Session	
Exam	Written
Workload	120h
Hours	**56**
Courses	28
Exercises	28
Number of positions	

Frequency

Every year

Remark

Next time: Spring 2022, online course

Summary

Learning Fourier Series and Boundary Value Problems with a view to a variety of science and engineering problems. Learn the use of special functions like Bessel functions and applications. Introduce the doctoral students to general Sturm-Liouville problems and applications.

Content

Textbook: J.W. Brown, R.V. Churchill, Fourier Series and Boundary Value Problems, McGraw Hill, 7th ed, 2008

Fourier Series; Convergence of Fourier Series; Partial Differential Equations of Physics; The Fourier Method; Boundary Value Problems; Fourier Integrals and applications; Orthonormal sets; Sturm-Liouville problems and applications; Bessel functions and applications.

Learning Prerequisites

Required courses

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