EPFL

CIVIL-604

Introduction to digital signal processing using Matlab, applied to environmental sciences and civil engineering

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Cursus	Sem.	Type
Civil & Environmental Engineering		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Project report
Workload	60h
Hours	**30**
Courses	15
TP	15
Number of positions	

Frequency

Every 2 years

Remark

Every two years/ Next time: Oct-nov 2020. Minimum 10

Summary

Provide civil engineers signal processing tools and bases in order to process and interpret monitoring datasets and give a practical introduction to matlab.

Content

The course will be held in two parts, the first part deals with basics of signal processing.
The fourier transform, sampling, spectral analysis and signal filtering are presented.
Also coding and plotting with matlab is introduced using practical examples.
In a second time during practical work a dataset has to be processed using matlab. The students can use their own dataset (accelerometers, displacement, impact-echo, etc …), if they have none a ground penetrating radar dataset will be provided.

Keywords

Signal processing, Matlab, for civil engineers