ENG-606(a) **Design of experiments (a) - Fall semester**

EPFL

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Cursus	Sem.	Туре	Language of	English
Advanced Manufacturing		Opt.	teaching	English
Civil & Environmental Engineering		Opt.	Credits Session	4
Energy		Opt.	Exam	Project report
Mechanics		Opt.	Workload	120h
Robotics, Control and Intelligent Systems		Opt.	Hours Lecture	56 20
			Practical work	36
			Number of	60

positions

Remark

Next time : Fall 2024

Summary

The course teaches the acquisition of a methodology of designing experiments for optimal quality of the results and of the number of experiments.

Content

Experiment analysis and planning

Treatment of qualitative factors

- Inference of constant and random coefficient models
- Graeco-latin squares design
- Balanced bloc design
- Analysis of variance (Anova)

Treatment of quantitative factors

- Empirical models
- Matricial treatment of the multilinear regression
- Analysis of non-orthogonal estimators
- Analysis of variance

Standard designs for first and second degree models

- Hadamard, factorial, fractional factorial designs
- Normal and half normal
- Composite, Doehlert and Box Behnken design
- Canonical analysis