ENG-606(a)

Design of experiments (a) - Fall semester

Fuerbringer Jean-Marie

Cursus	Sem.	Type
Advanced Manufacturing		Opt.
Energy		Opt.
Mechanics		Opt.
Robotics, Control and Intelligent Systems		Opt.

Language of teaching	English
Credits	4
Session	
Exam	Project report
Workload	120h
Hours	**56**
Courses	20
TP	36
Number of positions	**60**

Frequency

Every year

Remark

Next time: Fall 2026

Summary

Next course will take place on October 26-27, November 2-3, November 9-10, 2026. 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

Learning Prerequisites

Recommended courses

Basic statistics, Matrix algebra, Matlab or Python