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

Keywords
Experimental methodology, optimization of experimental plan, applied statistics, empirical models, sensitivity analysis

Learning Prerequisites
Recommended courses
Basic statistics, Matrix algebra, Matlab and/or Excel