- Faculté des sciences
- www.unine.ch/sciences

Statistical modelling and design of experiments (3ST2012)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en statistique	**Cours: 2 ph**	**Voir ci-dessous**	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante

Dr. Yves-Laurent Grize
Assurances La Baloise,
Aeschengraben 21
CH-4002 Bâle, Suisse
email: yves-laurent.grize@baloise.ch

Contenu

1. What is statistical experimental design
2. Full Factorial Designs with Factors at Two-Level
- Factors, interaction
- Analysis with normal and half-normal plot
3. Fractional Factorial Designs with Factors at Two-Level
- Construction
- Confounding of effects
- Analysis
4. Special Issues
- Design resolution
- Blocking
- Other screening designs
5. Modelling
- Advantage of orthogonal designs
- Model comparison
- Test of lack-of-fit
6. Optimization techniques
- Simplex
- Evop
- Steepest ascent
7. Response Surface Analysis
- Central composite designs
- Other designs
- Canonical analysis
8. Special Issues
- Simultaneous optimization of many responses
- Analysis of transformation
9. Robust Engineering Design
- Control and noise factors
- Taguchi method
- Parameter design optimization

Forme de l'évaluation

2 hours written exam at any exams session

Documentation

- Myers R.H. and Montgomery D.C., Response Surface Methodology: Process and Product Optimization Using Designed Experiments, Wiley (2005).
- Wu C.F.J, Hamada M., Experiments: Planning, Analysis, and Parameter Design Optimization, Wiley (2000).

Pré-requis

- Faculté des sciences
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Statistical modelling and design of experiments (3ST2012)

Linear Regression

Forme de l'enseignement

- 3 ECTS credits
- Elective course for master in statistics (choose 18/24 ECTS)
- Spring Semester