

Process: Optimization and Control



SCHOOL

Polytech Graduate School of
Engineering



CAMPUS

Belle-Beille



LEVEL

Engineering 3rd year



OPEN TO EXCHANGE STUDENTS

Yes



SEMESTER

Spring (S2)

> **Degree course:** Quality, Innovation and Reliability Engineering

> **Teaching unit:** Industrial production

> **Course language:** English

> **Duration (hours):** 40

> **ECTS:** 2

> **Teacher(s):** Mihaela Barreau

> **Assessment:**

Continuous assessment

Final exam

> **Teaching methods:**

Lecture course 14.67 hours

Tutorial course 17.33 hours

Practical work 8 hours

Case study

Project

COURSE DESCRIPTION

Bases of industrial process optimization

- Experiment principles
- Comparison statistical tests and Analysis of variance
- Test for distributional adequacy
- Two-level factorial experiments
- Taguchi experiments (design and interpretation)
- Capability
- Control chart for continuous data
- Control chart for discrete data

OBJECTIVES

Design and use experiments, monitor process stability

PREREQUISITES

statistics, linear algebra

SELECTIVE BIBLIOGRAPHY

- « La méthode des plans d'expériences », J. Goupy, Dunod, 1988
- « Conception de la qualité : les plans d'expériences », R.H. Lochner, J.E. Matar, AFNOR, 1992 « Pratique industrielle de la méthode Taguchi », J. Alexis, AFNOR, 1995
- « Les plans d'expériences », G. Sado, MC. Sado, AFNOR, 1991
- « Design and analysis of experiments », D. C. Montgomery, Wiley, 2001
- « Design and analysis of experiments », A. Dean, D. Voss, Springer, 1999
- Les livres de Gérald Baillargeon.
- Les livres de Maurice Pillet
- Six Sigma, comment l'appliquer, 2013,
- Appliquer la maîtrise statistique des processus SPC/MSP, 2005,
- Les plans d'expériences par la méthode Taguchi, 1997,