ML1019 Applied Industrial Statistics 9.0 credits

Tillämpad industriell statistik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for ML1019 valid from Spring 2013

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

For eligibility to the study course, the obligatory prior knowledge is a fundamental course in statistics like ML1018 or similar.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After finished course the participant should:

- Master the basic part according to ML1018
- Be able to use orthogonal matrices in different areas like QFD, Conjoint Analysis and design of experiments
- Be able to use multifactor standard arrays in experiment design
- Be able to create models for analysis using Monte Carlo technique
- Be able to make predictions with numerical analysis of risks and their probability

Course contents

To make models for Monte Carlo-simulations it is necessary to know and understand the fundamental part constituting ML1018. Because of this it is practical that the study courses are read in parallel for the first 6 hp. Without the basic knowledge the possibilities to make useful models in Monte Carlo are too limited. Design of experiments contains parts which are not pure statistical but where a profound knowledge in the area is important to understand the variation and detect sources of error. Also in this study course a major part is to learn how to use computerized tools to improve the analysis.

Course literature

- Kompendium i Monte Carloanalys
- Utdelat material för försöksplanering
- Övningskompendium för dator-laborationer och Monte Carlo-övningar
- Kursbok från ML1018

Examination

- ÖVN1 - Exercises, 2.0 credits, grading scale: P, F
- ÖVN2 - Exercises, 3.0 credits, grading scale: P, F
- TEN1 - Written Exam, 4.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

- Approved assignments, a final seminar with a seminar report, approved computer tasks ÖVN2 (3hp)
- approved group assignments and a seminar report ÖVN1 (3 hp)) (same for both ML1018 and ML1019) and a written examination TEN1 (3 hp) (same for both ML1018 and ML1019)

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.