



ML2104 Applied Industrial Statistics 7.5 credits

Tillämpad industriell statistik

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

Establishment

Course syllabus for ML2104 valid from Autumn 2014

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management

Specific prerequisites

A basic course in probability theory and statistics comparable with SF1901, Probability and Statistics or ML1018, Basic industrial statistics or the equivalent.

Language of instruction

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

Intended learning outcomes

The aim is to give the participants possibilities to use advanced statistical methods for data analysis, predictions and risk analysis as decision support within engineering related fields

On completion of the course the participants should be able to

- Analyse and present multidimensional data sets from industrial applications
- Used statistical distributions in stochastic simulation, based on given data
- Make stochastic simulations by using Monte Carlo techniques
- Explain what the simulation results say about risk and possibilities
- Use common methods within qualitative risk analysis, as a complement to numerical methods
- Make a complete risk analysis by using both qualitative and quantitative data
- Use the Design of Experiments method to evaluate multifactorial dependencies in risk analyses and predictions
- Write risk analysis reports which are understandable for all involved parties

Course contents

The course consists of three parts. The first part is an introduction to data analysis and descriptive statistics with applications within quality technology. The second part is stochastic simulation, and predictions with application in risk analysis. The third part is multifactorial experimental design by using statistical methods and orthogonal matrices.

An important part of the content is to adapt data to a possible statistical distribution to be used at stochastic simulation.

Disposition

Lectures
Laboratory exercises
Seminars

Course literature

Föreläsningsanteckningar, kursbok kommer beslutas i juni 2014

Equipment

Computer lab with @Risk software (available in Södertälje)

Examination

- ÖVN1 - Assignments, 4.5 credits, grading scale: P, F
- TEN1 - Examination, 3.0 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 homework and laboratory exercises

Approved written examination

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.