FIK3507 Statistical Problems in Simulation 6.0 credits

Simuleringens statistiska problem

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

Establishment

Course syllabus for FIK3507 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Language of instruction

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

Intended learning outcomes

The course aims at providing the students with the fundamentals of experimental design techniques in Stochastic simulation. The focus is on telecom applications. After completion of the course the students should be able to

1. generate random variables of arbitrary distributions,

2. make parameter estimates based on simulation results and assess their statistical error,
3. to test hypotheses with simulations,
4. to design simulations to lower the variance of usual simulation estimators, and finally,
5. to determine whether the stochastic model chosen is consistent with a set of actual data.

Course contents

1.Introduction & Probability review.

2.Random variable generators

3.Output data analysis: parameter estimation, correlation

4.Variance reduction techniques

5.Validation techniques & Hypothesis testing

Examination

- EXA1 - Examination, 6.0 credits, grading scale: P, 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

70% of the homwework problems adequately solved

Passed project report and oral presentation

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.