EP2970 Simulation of Communication Networks 7.5 credits

Simulering av kommunikationsnät

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

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

Establishment

Course syllabus for EP2970 valid from Autumn 2007

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

Language of instruction

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

Intended learning outcomes

The aim of the course is to introduce simulations and use simulation tools to analyze computer networks, protocols, and data traffic.After completing the course the students should be able to:

- Understand the foundations of computer network simulations

- Use simulations tools to analyse computer networks and data communications

- Understand the interaction between simulation, planning, dimensioning, design, and implementation of computer networks

Course contents

·   Principles and methods for simulation of computer networks and data communications. Random number generation, removing transients, variance reduction and confidence intervals. Benefits and limitations of simulations, validation and verification aspects.· Tools for computer network simulation·   Simulation of queuing models in communication networks ·   Simulation of functions and performance of protocols and data traffic on the data link, network, transport, and application levels in data communications · Evaluation and improvement of models in network and data communications ·   Simulation technique as an engineering tool for analyzing, planning, dimensioning, monitoring, and building real operating networks. The use of measurement data and configuration data from real networks in simulation ·   A major project applied to computer networks and data communications

Course literature

Special material.

Examination

- RED1 - Assignment, 4.5 credits, grading scale: A, B, C, D, E, FX, 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.

Other requirements for final grade

Written exam (TEN1: 3 hp): grades A-F
Lab assignments (LAB1; 4.5 hp): grades A-F
Final grades: A-F

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.