FEP3210 Advanced Performance Analysis of Communication Networks 9.0 credits

Advanced Performance Analysis of Communication Networks

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

Establishment

Course syllabus for FEP3210 valid from Autumn 2012

Grading scale

G

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

By the end of the course students will be able to construct tractable models of complex networking problems and attack performance problems with analytical methods or simulation. These abilities are necessary for everyone working on technical fields - to understand the capabilities of specific technologies and the success or failure of new trends.

Course contents

The course consists of 24 hours of lectures, home assignments requiring roughly 20, project work requiring 30, and student presentation requiring 20 hours of work by each students.

The course addresses performance issues in current and future Internet architectures:

- Multi-access communication: CSMA/CD - reservation techniques (token and polling) - packet radio networks (WLANs)
- Routing in data networks: shortest path routing - optimal routing and topology design
- Flow control (TCP)
- Quality of service (QoS) in IP networks: requirements for multimedia transmission - network support: scheduling, shaping, forward error correction
- Current research topics on network performance

Disposition

Lectures, homeworks, small project and student presentation.

Examination

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.

Continuous exmaination based on small tests, home assignment and project.

Other requirements for final grade

Grade based on the results of tests, home assignments and project. Passed student 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.