IK1611 Dimensioning of Communication Systems 7.5 credits

Dimensionering av kommunikationssystem

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

Establishment

Course syllabus for IK1611 valid from Autumn 2008

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Basic course in communication systems or computer communication and networks (e.g., 2G1316, 2G1501, or 2G1317)

Language of instruction

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

Intended learning outcomes

After the course students shall be able to define the basic queuing models for different communication systems and dimension the systems in terms of router capacity, delay and throughput. This goal is both result oriented and easy to examine.

Course contents

The course will cover the following: * Terminology, definitions and basic formulas* Basics of probabilistic theory and Markov chains. * Modeling of communication systems in terms of delay, packet loss probability, system utilization etc.* Open and closed queuing networks. * The emphasis will be put on solving practical dimensioning problems for communication systems and networks.

Course literature

Queuing Systems, Maria KihlUpplaga: - Förlag: - År: 2006ISBN: - **Övrig litteratur**Lecture notes Collection of problems

Examination

- INL1 - Assignment, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 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

To pass the course one needs to pass a written exam (4.5 credits) and a project work (3 credits). The project work includes solving a real dimensioning problem, writing a report and presenting the result at the seminar.The final grade will be based on the results from the exam and project work. In the Spring semester 2007 grades 2-5 will be applied, i.e., grade 2 corresponds to not passed, grade 3: passed, grade 4: good and grade 5: very good. To pass the course the students shall be able to define the appropriate models for the Markovian systems and to dimension the systems according to these models. For higher grade

the students shall be able to treat more complicated systems.From 2007-07-01 the grades will include seven levels (A, B, C, D, E, Fx, 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.