IK2560 Mobile Networks and Services 7.5 credits

Mobila nätverk och tjänster

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

The official course syllabus is valid from the autumn semester 2022 in accordance with the decision from the head of school: J-2022-0581.Decision date: 28/03/2022

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

IK1203 Networks and communication or the equivalent.

Language of instruction

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

Intended learning outcomes

After passing the course, the student shall be able to

- explain basic functions in mobile networks and make performance calculations
- discuss the effect of the availability of affordable mobile services and the internet of things (IoT) in a global society
- explain the architecture of existing mobile and wireless networks and compare a network architecture with another
- describe the most important transmission methods, the network protocols and the applications in the cellphone networks of the current generation
- explain, in at sense, environment and sustainability challenges for the IKT sector, included electromagnetic radiation, energy consumption, limited natural resources, environment harmful effects, economic effects (both infrastructure and equipment) and economic and social societal effect
- show their knowledge of mobile networks and services both orally and in writing
- follow the current literature i.e. survey papers, conference contribution and periodical articles in the area.

Course contents

- Basics of transmission methods, signal encoding, overview of wireless communication.
- Architecture for wireless LAN, PAN and BAN.
- Architecture of the cellphone networks of the current generation.
- Mobile applications, the things internet (IoT), and device-to-device communication (D2D).
- Sustainable development and tele-economy.

Examination

- PRO1 - Project, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - On-campus digital assessment, 4.0 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.

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.