



EQ2444 Project in Communication Engineering 7.5 credits

Projekt i kommunikationsteknik

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

Establishment

The official course syllabus is valid from the autumn semester 2023 in accordance with the decision by the Head of School: J-2023-0961. Date of decision: 2023-04-14.

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

Knowledge in communications, 15 higher education credits, equivalent to the completed courses of two among EQ2300, EQ2411, EP2950.

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 should be able to

- plan a larger project and develop software for a communication system within a given time frame and with given specifications
- justify and formulate relevant problem-oriented questions
- estimate and coordinate the workload to meet the stated deadline
- apply theoretical knowledge acquired in earlier courses to solve project-related problems
- implement (for example with Matlab, Python, C, C++) and evaluate the developed algorithms
- explain design choices in an engineering context
- discover problems or challenges and suggest possible solutions
- present and demonstrate the achieved results for different target groups
- write a technical project report that justifies the completed project, discusses and analyzes the relevant challenges, summarises relevant aspects on the implementation and received experimental results, and evaluates and draw conclusions around the achieved results.

Course contents

- A group about 2-7 students should solve a project task, whose aim is that before a certain date produce a prototype that satisfies a given specification. It is the students' assignment to plan and carry out the work, i.e., a project plan should be written and be followed. In the project plan, the subprojects that the project consists of are specified, in which order the subprojects should be carried out, when they should be managed, and who or which in the group that should carry out the work.
- There are several possible solutions to the project tasks. The students will therefore during the time of the project encounter many practical problems that require engineering decisions. The participants learn thereby to acquire the necessary theoretical and practical knowledge that is required to solve a project task.
- The course is completed with an oral presentation and a demonstration of the prototype or a presentation of achieved results. During the time of the project, written documentation should be produced. The requirements of the oral and written reporting are similar to the requirements that are set on a degree project.
- Each student will focus on one or several of the tasks of programming (or other implementation work), project management, algorithm development, and gathering of expertise.
- The students should write a "reflective diary" during the work, where they document proof for their learning. Such proofs can e.g. be performance plots with explanations or reports for the use of methods/tools and detailed descriptions of technical problems that have arisen during the work.

Examination

- PRO1 - Project, 7.5 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.

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.