II1304 Engineering Skills for ICT 7.5 credits

Ingenjörskunskap och ingenjörsrollen ICT

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

Establishment

Course syllabus for II1304 valid from Autumn 2012

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

The course aims to provide an understanding of engineering's role and its requirements, to provide knowledge of engineering practices and to provide basic skills in using different engineering tools, with emphasis on project methodology, modeling, experimental design and execution, and presentation skills. This course will also support the student's own ability to plan and conduct their training on the road to an engineering degree and prepare students for their future professional role.

The course is conducted in coordination with the parallel courses and consists of lectures, exercises, projects, self reflection, and oral and written presentations.

The course spans the first three years.

After the course the student should be able to:

• plan and carry out tasks and small projects within the stipulated time.

• describe and understand how group dynamics affect a project.

• use simple development processes, tools and methods.

• use simple mathematical and logical models for engineering problems.

• model a simple system.

• plan, implement, analyze and present results from experiments aimed at measuring quantitative characteristics of a system or analyze its behavior.

• writing smaller technical reports and CVs.

• apply known methods of oral presentation skills.

• plan, implement and reflect on their studies with a study technique that involves:

- use academic plans, course syllabi, learning outcomes and assessment criteria in order to plan their studies in both the short and long term.

- make well-reasoned course and master registrations.

- critically examine and reflect on both the programme design and implementation as well as of their own study effort.

- follow the thread of the programme and see the progression of both subject knowledge and generic skills, in relation to the aims of the education and future professional roles.

• identify the need for further knowledge and continuously upgrade their skills.

• analyze and evaluate the social and ethical impact.

Course contents

Course content focuses on some key areas for an engineer: the implementation of and work on a project, modeling, basic scientific and experimental methodology and presentation of results. These areas are explored in conjunction with parallel courses. The course is based on the idea of an academic introduction by supporting the development of the individual in

order to plan and carry out their studies, interact with colleagues, conduct oral and written presentations of ideas and results, and understand their future professional role and its role in society. This includes inter alia:

• The role of curriculum, learning objectives, grading criteria, examinations at KTH.

• Objectives of the program, generic competencies, common thread of education.

• The program structure, choices, employability.

• Evaluation of program quality, student influence.

• Study, personal responsibility, self-development over a career, self-reflection - what I want with my education?

• Construction of display portfolio and your CV.

• Basic Ethics.

Common to all procedures is to seek information from businesses and industry.The course includes compulsory study and self-reflection exercises.

Course literature

Att arbeta i projekt, Eklund, Studentlitteratur.

Ytterligare litteratur bestäms senare.

Examination

- UPP4 - Assignments, 1.5 credits, grading scale: P, F
- UPP3 - Assignments, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- UPP2 - Assignments, 1.5 credits, grading scale: P, F
- UPP1 - Assignments, 3.0 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.

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.