



Course syllabus

Faculty of Technology

Department of Physics and Electrical Engineering

2ED430 Kompletterande studier för kandidatexamen i elektroteknik,
60 högskolepoäng

Complementary Studies for a Bachelor Degree in Electrical
Engineering, 60 credits

Main field of study

Electrical Engineering

Subject Group

Electrical Engineering

Level of classification

First Level

Progression

G2E

Date of Ratification

Approved by Faculty of Technology 2014-10-03

The course syllabus is valid from autumn semester 2015

Prerequisites

120 credits, of which at least 45 credits are in electrical engineering or equivalent. At least 22,5 credits must be in mathematics, and at least 7,5 credits must be outside of the main field of study electrical engineering.

Objectives

The objectives are described in the syllabus of each course included in this course.

Content

The course consists of the following courses:

Autumn semester:

Radio engineering, G2F 7.5 credits

Automatic control, G2F 7.5 credits

Automatic control Advanced course, A1N 7.5 credits

Mobile radio systems, G2F 7.5 credits or Microwave Technology, G2F 7.5 credits

Spring semester:

Antenna technology, G2F 7.5 credits

Advanced Analog Electronics, G2F 7.5 credits

Electrical Engineering, Degree Project (Bachelor), G2F 15 credits

Short description

Radio engineering - The course covers transmission lines, resonant circuits, amplifiers and oscillators, Frequency Synthesis and phase locked loops.

Automatic control - The course teaches the basics of classical control theory. Systems

are modeled, controllers are designed, and systems are analyzed.

Automatic control advanced course - The course covers analysis and synthesis with state models as well as analysis of non-linear control systems.

Mobile radio communication - The course deals with wave propagation in the atmosphere, ionospheric reflection, the standard model of the mobile channel and digital modulation.

Microwave technology - The course deals with transmission line theory, the Smith chart, multiports and noise as well as waveguides and microstrip lines.

Antenna technology - The course introduces different types of antenna and antenna concepts. Wire dipoles and array antennas are treated.

Advanced Analog Electronics - The course covers electronic design for high frequencies using integrated transistors in amplifiers, oscillators and PLL.

Degree project.

Type of Instruction

See the syllabus for each course.

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

The grade Pass with Distinction can be reached if the average course grade is 4.3 (ordinary grades) for all courses except the degree project, and that the degree project is awarded grade A or B on the A-F scale.

Assessment methods: See the syllabus for each course included in this course.

Course Evaluation

A course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

Credit Overlap

This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: 2ED130 Complementary Studies for a Bachelor Degree in Electrical Engineering, 60 credits

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

Compulsory literature:

See the syllabus for each course.