



Course syllabus

Faculty of Technology

Department of Physics and Electrical Engineering

2ED393 Radioteknik, 7,5 högskolepoäng

Radio engineering, 7.5 credits

Main field of study

Electrical Engineering

Subject Group

Electrical Engineering

Level of classification

First Level

Progression

G2F

Date of Ratification

Approved 2014-10-03

Revised 2020-09-03 by Faculty of Technology. Prerequisites are revised.

The course syllabus is valid from autumn semester 2021

Prerequisites

60 credits in Electrical Engineering or Computer Engineering or a combination including Analog Electronics, or equivalent, English B/6 or equivalent

Objectives

The course emphasises the high frequency aspects of telecom technology. The student is expected to understand the role of the spatial dimension in the interference between waves on transmission lines and to obtain a deeper knowledge of the building blocks in a radio system.

Content

The course comprises the following topics:

- Transmission lines, the Smith chart
- Impedance transformation
- Class A and C amplifiers
- HF amplifiers
- LC and crystal oscillators
- Mixers
- Digital frequency synthesis
- Phase locked loop, PLL

Type of Instruction

Lectures and laboratory sessions.

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).

Laboratory sessions and written assignments. Written exam for the higher grades.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Credit Overlap

The course cannot be included in a degree along with the following courses of which the content fully, or partly, corresponds to the content of this course: 2ED092 Radio engineering, 7.5 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

Pozar D. M., *Microwave and RF Design of Wireless Systems*, Wiley, 2001. Pages 200 (350).