



Course syllabus

Faculty of Technology

Department of Physics and Electrical Engineering

4ED374 Mobil radio och vågutbredning, 7,5 högskolepoäng

Mobile Radio Communication and Wave Propagation, 7.5 credits

Main field of study

Electrical Engineering

Subject Group

Electrical Engineering

Level of classification

Second Level

Progression

A1N

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

Bachelors degree 180 credits in Electrical Engineering, Computer Engineering including Signals and Systems, Analogue Electronic Circuits, English B/6 or equivalent.

Objectives

The course treats parts of the field of mobile radio communication. The student is expected to combine knowledge of wave propagation and signal processing in order to obtain an understanding of mobile radio systems. Problemsolving is practised on a set of assignments that are adapted to the advanced level.

Content

The course consists of the following topics:

- Antennas, wave propagation
- Diffraction, wave propagation models
- The mobile channel, fading
- Digital modulation and coding
- Diversity

Type of Instruction

Lectures and tutorials.

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).

Written assignments and a written exam.

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: 4ED074 Mobile Radio Communication and Wave Propagation, 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

Required reading

Ahlin L., Zander J. & Slimane B., *Principles of wireless communications*, Studentlitteratur, 2006. Pages 300 (700).