



## 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 by Faculty of Technology 2014-10-03

The course syllabus is valid from autumn semester 2015

### **Prerequisites**

Bachelors degree 180 credits in electrical engineering, and the courses Telecommunication 7.5 credits (1ED042), Digital signals and systems 7.5 credits (1ED052), Analogue signals and systems 7.5 credits (1ED062), or the 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.

### 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: 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).