



FSK3893 Microwave Engineering, Basic PhD Course 7.5 credits

Mikrovågsteknik, grundläggande doktorandkurs

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

Establishment

Course syllabus for FSK3893 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Enrolled as PhD student.

Compulsory courses during the first three years of electrical engineering programs or equivalent.

Language of instruction

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

Intended learning outcomes

After the course the participants should be able to:

- Apply electromagnetic theory to calculations regarding waveguides and transmission lines
- Describe, analyse and design simple microwave circuits and devices e.g. matching circuits, couplers, antennas and amplifiers
- Describe and coarsely design common systems such as radar and microwave transmission links
- Describe common devices such as microwave vacuum tubes, high-speed transistors and ferrite devices
- Handle microwave equipment and make measurements

Course contents

The course corresponds to the undergraduate course Microwave Engineering, where approximately half of the textbook by Collin is treated. In this course, the same parts of Collin are studied but the examination takes the form of home assignments and participation in three compulsory laboratories.

Disposition

- Seminars and home assignments
- Three laboratories

Course literature

"Microwave Engineering" by R.E. Collin, from McGraw-Hill ISBN 0-07-112569-8 (2nd edition from 1992) or from Wiley-IEEE Press, ISBN: 0-7803-6031-1

"Problems Manual and Laboratory Instructions" by Urban Westergren, 2004

Examination

- HEM1 - Home assignments, 6.0 credits, grading scale: G
- LAB1 - Laboratory work, 1.5 credits, grading scale: G

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.

HEM1: Home assignments, 6 hp, grade scale: P/F
LAB1: Laboratories, 1,5 hp, betygskala: P/F

Other requirements for final grade

Passed home assignments and laboratories.

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.