

SYLLABUS

Electronics II 7.5 credits

E7014E

Elektronik II

Course syllabus admitted: Autumn 2016 Sp 1 - Present

DECISION DATE
2016-02-15

Electronics II 7.5 credits E7014E

Elektronik II

Second cycle, E7014E

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Elektroteknik	Electrical Engineering

Entry requirements

The course E0007E Electronics or equivalent. This means that the students should be able to design simple electronic circuits based on op-amps, transistors, diodes and passive components. The student should be familiar with the simulation program OrCAD. The student should also be able to verify and document the properties of the designed circuits and be able to plan and do laboratory work in electronics.

Alternative:

Alternative to completed courses can be corresponding knowledge acquired through work within the electronics sector.

Selection

The selection is based on 30-285 credits

Examiner

Jonny Johansson

Course Aim

The student should be able to describe the function of common semiconductor components, both in discrete and integrated form, and be able to design, build, verify and document discrete circuits useful in the fields of measurement technology and communications.

Contents

- Single-stage integrated-circuit amplifiers. - Differential and multistage amplifiers. - Feedback. - Architecture of op-amps. - Filters and tuned amplifiers. - Oscillators and some non-linear circuits. OrCAD is used for documentation and simulation of the designed circuits in preparation for the lab exercises.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures, homework assignments, and compulsory lab assignments. Important concepts are treated during the lectures. The ability to describe the function of semiconductor components is trained in the homework assignments and the ability to design, build, verify and document discrete circuits is mainly trained in the laboratory assignments.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Approved laboratory assignments and written exam with differentiated grades.

Remarks

The course is at advanced level and prepares the student for the course E7009E Electronic design which is about designing, together with a fellow student, a complete apparatus such as an audio amplifier.

Overlap

The course E7014E is equal to E7030E

Literature. Valid from Spring 2012 Sp 3

Microelectronic Circuits, 6th ed. 2011.
Sedra/Smith, Oxford University Press, ISBN 978-019-973851-9.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Items/credits

Number	Type	Credits	Grade
0001	Written exam	4.5	G U 3 4 5
0005	Laboratory work	3	U G#

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Jonny Johansson, HUL SRT 2016-02-15

Syllabus established

by the Department of Computer Science and Electrical Engineering 2007-02-28