

# Analog Circuits

Programme course

6 credits

Analog konstruktion

TSTE93

Valid from: 2017 Spring semester

**Determined by**

Board of Studies for Electrical  
Engineering, Physics and Mathematics

**Date determined**

2017-01-25

## Main field of study

Electrical Engineering

## Course level

First cycle

## Advancement level

G2X

## Course offered for

- Engineering Electronics
- Computer Science and Engineering, M Sc in Engineering
- Applied Physics and Electrical Engineering, M Sc in Engineering
- Information Technology, M Sc in Engineering
- Applied Physics and Electrical Engineering - International, M Sc in Engineering

## Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

## Prerequisites

Basic Electronics and Measurement technology, Circuit theory

## Intended learning outcomes

The purpose is to give knowledge in analysis and synthesis of electronic systems. Special intention is given of computer aided design. After the course the student shall have skills to:

- produce a specification of an analog system involving both electrical and other relevant characteristics
- design electrical and mechanical parts (e.g. printed circuit boards) of the system with help of CAD-CAE tools -validate the correct function and performance of the system by simulation
- assemble the system
- perform functional and performance measurements of the system
- produce technical documents of the system

## Course content

Electronic systems. Operational amplifier circuits. Nonideal characteristics of op amps. Amplifier frequency response. Semiconductors. Power amplifiers. Thermal dynamics of power amplifiers. Power supplies. Computer aided analysis and design.

## Teaching and working methods

The course is organized in lectures and a design project, where the task is to design an audio power amplifier.

The course runs over the entire spring semester.

## Examination

PRA1 Project work and laboratory work 6 credits U, G

Grades are given as "Fail" or "Pass"

## Grades

Two-grade scale, U, G

## Department

Institutionen för systemteknik

## Director of Studies or equivalent

Tomas Svensson

## Examiner

Mark Vesterbacka

## Course website and other links

<http://www.isy.liu.se/edu/kurs/TSTE93/>

## Education components

Preliminary scheduled hours: 16 h

Recommended self-study hours: 144 h

## Course literature

Kompendiematerial från institutionen (ISY).

## Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at [http://stydokument.liu.se/Regelsamling/Innehall/Utbildning\\_pa\\_grund-\\_och\\_avancerad\\_niva](http://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva).