



# DT242V Loudspeaker Design

## 7.5 credits

### Högtalarkonstruktion

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

If the course is discontinued, students may request to be examined during the following two academic years

### Establishment

Course syllabus for DT242V valid from Autumn 2008

### Grading scale

P, F

### Education cycle

Second cycle

### Main field of study

Electrical Engineering

### Specific prerequisites

Single course students: 90 university credits including 45 university credits in Mathematics or Information Technology. Swedish B, or equivalent and English A, or equivalent.

### Language of instruction

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

## Intended learning outcomes

Participants shall after the course be able to Describe how the electro-dynamical loudspeaker converts an electrical signal to sound Describe the effects of the box design on the sound-ing properties of the loudspeaker system Use simulation tools and moderns measurement techniques as aids for loudspeaker and crossover design choose appropriate measurement methods for the different problems in loudspeaker design Choose appropriate methods for perceptual evaluation of loudspeaker systems.

## Course contents

Sound. Frequency response and distortion. Linearity. The loudspeaker driver and Thiele/Small parameters. Closed and vented boxes. Baffle step. Effects of the room. Crossover filters. Computer simulation. Measurement techniques, sweep measurements, impulse response. Fourier transform, spectrum, perceptual evaluation.

A loudspeaker system is designed in project form.

## Course literature

Testing Loudspeakers by Joseph D'Appolito ISBN 1-882580-17-6 and complements.

## Examination

- INL1 - Assignments, 4.5 credits, grading scale: P, F
- PRO1 - Project, 3.0 credits, grading scale: P, F

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.

## Other requirements for final grade

Obligatory presence. Project assignment (preliminary and final reports) and four assignments.

## 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.