DT2410 Audio Technology 7.5 credits

Audioteknik

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

The official course syllabus is valid from the autumn semester 2021 in accordance with Head of School decision: J-2021-0878.Decision date: 15/04/2021

Grading scale

A, B, C, D, E, FX, 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. English B, or equivalent.

Language of instruction

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

Intended learning outcomes

The participants shall upon completion of this course

- be able to specify at a block diagram level the functions/components that must or may be included in audio systems for various applications; with regard for technical constraints such as channel count, converter types, data reduction methods, power requirements and storage
- be able to assess audio systems with regard to sound quality and suitability in given applications
- be acquainted with how real-time audio data are usually managed in audio software and in operating systems
- have obtained basic experience with using a mixing desk and its major peripherals such as dynamics processor, reverb unit and equaliser
- be able to understand the first few pages of data sheets for audio integrated circuits
- be able to participate in the planning, deployment and maintenance of new and existing systems
- have a broad perspective on how transforms, signal theory, discrete mathematics, information theory, electronics and physics all come together in audio applications

Course contents

Two- and three-dimensional sound reproduction, surround formats. A/D and D/A conversion for audio in detail. Studio signal processing. Data reduction methods. Integrated circuits for audio. Hard disks and audio. Optical disks in audio. Sound quality assessment. Software architectures for audio. Audio in broadcasting. The course assignment involves writing an in-depth article on a self-selected sub-topic in audio. Several guest lecturers contribute with their expertise. For a detailed description, please see the home page of this course.

Examination

- ANN1 - Assignment, 1.5 credits, grading scale: P, F
- LAB1 - Laboratory Course, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, 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.

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.