SYLLABUS

Audio Signal Processing 7.5 credits S7006E

Audiobehandling

Course syllabus admitted: Autumn 2010 Sp 1 - Autumn 2011 Sp 1

DECISION DATE
2010-02-19

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LULEÅ TEKNISKA UNIVERSITET

Audio Signal Processing 7.5 credits S7006E

Audiobehandling

Second cycle, S7006E

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5		Computer Science

Entry requirements

Linear systems theory, signal analysis and transform theory, basic skills in Matlab. (S0001E)
Alternative:
Alternative to completed courses can be corresponding knowledge acquired through work within the IT- or electronics sector.

Selection

The selection is based on 30-285 credits

Examiner

James Le Blanc

Course Aim

After completion, the students should be able to evaluate, implement and extend time and frequency domain algorithms for the processing of audio/musical signals.

Contents

The course covers the most common strategies to process audio such as
- Audio Filters - Equalizers, Wah-Wah filter, Time Varying Equalizers
- Delay Effects - Comb Filters, Vibrato, Flanger, Chorus, Echo
- Modulators/Demodulators
- Nonlinear Processing - Limiter/Compressor, Noise Gate, Tube/ Valve Simulation, Exciters and Enhancers
- Spatial Effects - Room Simulators, Reverberation, Stereo Enhancement

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
The teaching consists of lectures with theory, examples, problem solving sessions and a mandaatory project assignment. A fair amount of emphasis will be placed on the digital implementation of the algorithms and assessment of their implementation in the labs.

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.
Final project, written report and oral presentation.

Remarks

The course will not be given every year.

Overlap

The course S7006E is equal to SMS044

Literature. Valid from Autumn 2008 Sp 1

The title of the coursebook: \"DAFX Digital Audio Effects\", author: Udo Zölzer

Course offered by

Department of Computer Science, Electrical and Space Engineering

Items/credits

Number	Type	Credits	Grade
0001	Project	4.5	G U 3 4 5
0002	Laboratory work	3	U G#

Study guidance

http://www.ltu.se/csee/utbildning/kurser/GU?l=en

Last revised

by the Department of Computer Science and Electrical Engineering 2010-02-19

Syllabus established

by the Department of Computer Science and Electrical Engineering 2007-12-17