Mittuniversitetet
MID SWEDEN UNIVERSITY

Course Syllabus:

Electronics MA, Applied Digital Filters, 3 Credits

General data

Code	EL022A
Subject/Main field	Electronics
Cycle	Second cycle
Credits	3.00
Progressive specialisation	Second cycle, has only first-cycle course/s as entry requirements
Answerable department	Faculty of Science, Technology and Media
Established	2010-07-01
Date of change	2015-03-04
Version valid from	2013-08-15

Aim

The course aims to provide a deeper understanding of the theory of digital filters and gives practical skills to implement digital filters using computer systems.

Course of objectives

After completion of the course the student must demonstrate the ability to:
- Design a FIR- or IIR-filter using computer-aided design tools for calculating the filter parameters,
- Apply the principles for different ways of realising time-discrete digital filters,
- Apply the principles and limitations at sampling and re-construction of time-continous signals.

Content

Time- and amplitude discrete filters, FIR-filters, IIR-filters, realisation, stability, computer-aided computation of filter parameters, and reconstruction of time-continuous signals that has been sampled.

Entry requirements

Electrical Engineering, 60 Credits (60 ECTS) including digital electronics and analogue electronics, and Mathematics 15 Credits (15 ECTS) including differential and integral calculus, transforms, and basic mathematical statistics.

Selection rules and procedures

The selectionprocess is in accordance with the Higher Education Ordinance and the local order of admission.

Teaching form

Teaching is done by lectures, laborations and a project assignment.

Examination form

Examination is done by a written report on the project assignment.

Grading system

The grades A, B, C, D, E, Fx and F are given on the course. On this scale the grades A through E represent pass levels, whereas Fx and F represent fail levels.

Course reading

Required literature

Steven W. Smith, Guide to digital signal processing, http://www.dspguide.com