



IL2239 Analog-Digital Interfaces 7.5 credits

Analoga-digitala gränssnitt

Course syllabus for IL2239 valid from Spring 19

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

Grading scale: A, B, C, D, E, FX, F

Education cycle: Second cycle

Main field of study: Electrical Engineering

Intended learning outcomes

The aim of the course is to provide an understanding of and experience in concepts, analysis, design and test of analog-digital interfaces for a wide range of applications. Experience in design methods and design flows as well as tools to test analog-digital interfaces is also acquired.

After the course, the students should be able to:

- explain the basic design concepts for analog-digital interfaces
- apply knowledge in analysis, simulation, design, and test of interfaces and their building blocks
- identify critical parameters that influence the performance of analog-digital interfaces
- select and design the most appropriate analog-digital interface architecture for a specific application.

Course main content

The main theme of this course concerns concepts, analysis and test of analog-digital interfaces and their building blocks such as:

- sample/hold circuits and active filters for signal conditioning
- analog-digital and digital-analog converters
- performance metrics for data converters
- Nyquist rate and oversampling analog-digital and digital-analog converters
- design and testing methodologies

Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

Eligibility

Basic knowledge in electronics and signal processing is required.

Literature

Behzad Razavi, "Principles of Data Conversion System Design" IEEE Press.

David A. Johns, Ken Martin, "Analog integrated circuit design", Wiley & Sons, Inc.

Examination

- INL1 - Assignments, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F