IL1331 VHDL Design 7.5 credits

VHDL-design

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 IL1331 valid from Autumn 2008

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Electrical Engineering,Technology

Specific prerequisites

Basic knowledge corresponding to the courses IE1204/IE1205 Digital Design and IS1200 Computer Hardware Engineering.

Language of instruction

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

Intended learning outcomes

Design and evaluation of digital designs with the hardware description language VHDL using modern software tools.

The student should learn how to:

- model digital systems in VHDL at different levels of abstraction
- partition a digital system into different subsystems
- simulate and verify a design
- transfer a design from a version possible to simulate to a version possible to synthesize
- use modern software tools for digital design in VHDL
- describe principal parts in programmable circuits (PLD, FPGA, ASIC) and describe how small designs are implemented in programmable circuits

Course contents

- Basic VHDL
- Testbenches
- Synthesis with VHDL
- Software tools: simulators and synthesis tools
- Programmable circuits (PLD, FPGA och ASIC)
- Design methods

Course literature

VHDL för konstruktion, Sjöholm, S. - Lindh, L. Upplaga: 4 Förlag: Studentlitteratur. År: 2003. ISBN: 91-44-02471-1.

Övrig litteratur:

Ashenden, P.: The Designer's Guide to VHDL. Upplaga: 2 ISBN 1-55860-674-2.

Examination

- LAB1 - Laboratory Work, 4.5 credits, grading scale: P, F
- TEN1 - Examination, 3.0 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.