



IL2452 System Design Languages 7.5 credits

Språk för system design

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

Establishment

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

120 university credits (hp) in engineering or natural sciences and documented proficiency in English corresponding to English A.

Language of instruction

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

Intended learning outcomes

After completing the course, the student shall be able to

- explain the key concepts proposed for system-level modeling in SystemC and how C++ features are utilized in implementing these concepts
- model systems (both hardware and software) in SystemC
- explain and compare the fundamental modeling mechanisms in SystemC and other digital design languages such as VHDL and Verilog
- master the key transaction level modeling (TLM) concepts and write own models following TLM standards for high-level fast simulation
- contrast different approaches for system-level design

Course contents

- Review of C++ basics from the SystemC perspective
- SystemC concepts: Processes, Modules, Ports, Interfaces, Channels, and SystemC data types
- SystemC simulation kernel
- TLM concepts, interfaces, channels and modeling examples
- ForSyDe methodology

Course literature

The course reference books are

- David C. Black, Jack Donovan, Bill Bunton and Anna Keist, SystemC: From The Ground Up, Second Edition, Springer, 2008.
- Thorsten Grötter, Stan Liao, Grant Martin and Stuart Swan, System Design with SystemC, Kluwer Academic Publishers, 2002.

Examination

- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Laboratory Work, 4.5 credits, grading scale: P, 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.

If the course is discontinued, students may request to be examined during the following two academic years.

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.