Mittuniversitetet
MID SWEDEN UNIVERSITY

Course Syllabus:

Elektronics MA, System Modelling, 3 Credits

General data

Code	EL023A
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	2010-12-16
Date of change	2015-03-04
Version valid from	2013-08-15

Aim

The course aims to provide an understanding of methodologies and modern tools for modeling of advanced electronic systems. The course introduces various "Models of Computation" and how to choose them based on various characteristics and subsystems and on how closely the temporal dimension is described by the model. Other important concepts are "communications" and "estimate", and how and why these are described separately in a model system. Practical application is part of the course.

Course of objectives

At the end of this course student should know how
- designs can be formulated for efficient implementation
- embedded system modules are executed
- data is exchanged between embedded system modules

Content

The course cover the following areas
1. Introduction, design and modelling of embedded systems
2. Models of Computation (MoC)
3. Function and parallelism
4. Un-timed and timed model of computation
5. Communication Interfaces

Entry requirements

Electrical Engineering, 60 Credits including digital electronics, and programming in C/C++ or Java.

Selection rules and procedures

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

Teaching form

Lectures, seminars, laborations, and project

Examination form

1.5 Credits, L101: Laborations
Grades: A, B, C, D, E, Fx and F. A-E are passed and Fx and F are failed.

1.5 Credits, P101: Project with oral presentation
Grades: A, B, C, D, E, Fx and F. A-E are passed and Fx and F are failed.

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

Axel Jantsch, Modeling embedded systems and SoC´s - Concurrency and time in models of coputation, Morgan Kauffman Pub, 2004, 1-55860-925-3