IL2206 Embedded Systems 7.5 credits

Inbyggda System

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

Establishment

Course syllabus for IL2206 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering, Electrical Engineering

Specific prerequisites

Completed course in Programming equivalent ID1018 Programming I, or DD1337 programming or DD1316 Programming techniques and C.

Completed course in computer engineering equivalent IS1200 Computer Hardware Engineering, basic course.

Language of instruction

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

Intended learning outcomes

Having passed the course, the student should be able to

- describe the fundamental structure of the platform for embedded computer systems and explain cooperation between the software and the hardware components
- analyse how architecture and implementation decisions influence the performance in an embedded system
- use basic models and analytical methods for embedded realtime systems
- develop software for simple embedded real time systems

in order to obtain a good understanding of the design process for embedded systems and basic methods and technologies for the design of embedded systems.

Course contents

- Design process for embedded systems. Design requirements.
- The platform for embedded systems and its components.
- Analysis and optimisation of software for embedded systems.
- Periodic process model, basic scheduling algorithms and scheduling analysis.
- Parallel processes and communication mechanisms.
- Realtime operating systems.
- Acceleration of the system through additional hardware. Co-design of hardware and software.

Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 3.0 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.

In agreement with KTH´s coordinator for disabilities, it is the examiner who decides to adapt an examination for students in possess of a valid medical certificate.. The examiner may permit other examination forms at the re-examination of few students

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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.