ID1206 Operating Systems 7.5 credits

Operativsystem

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

Establishment

On 2021-04-15, the Head of School of EECS has decided to establish this official course syllabus to apply from the autumn semester 2021 (registration number J-2021-0995).

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

- Knowledge and skills in programming, 6 credits, corresponding to completed course ID1018.
- Knowledge in computer hardware engineering, 7,5 credits, corresponding to completed course IS1200.
- Knowledge and skills in algorithms and data structures, 4,5 credits, corresponding to completed course component ARBA in ID1020/ID1021.

Active participation in a course offering where the final examination is not yet reported in Ladok is considered equivalent to completion of the course.

Registering for a course is counted as active participation.

The term 'final examination' encompasses both the regular examination and the first re-examination.

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:

- explain how multi-threaded processes are structured
- explain how an operating system can handle several processes at the same time
- implement parts of the functions of an operating system.

For higher grades, the student should also be able to

- explain how virtualisation of memory is implemented
- explain how memory management is implemented
- explain properties for different scheduling algorithms
- explain properties for different types of process communication
- explain implementation of more advanced file system.

Course contents

The course provides knowledge of the principles of and how one can implement

- abstractions of hardware
- virtualisation of resources and timetabling of assignments; mainly as regards execution, memory and persistent storage.

The structure of an operating system is studied to increase the knowledge of these concepts and also give skills in efficient use of the abstraction level that an operating system offers.

Examination

- SEMA - Seminar, 1.5 credits, grading scale: P, F
- TENA - Examination, 6.0 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.

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.