



COURSE SYLLABUS

Operating System Theory, 6 credits

Operativsystemsteori, 6 högskolepoäng

Course Code:	TOSK14	Education Cycle:	First-cycle level
Confirmed by:	Dean Feb 27, 2014	Disciplinary domain:	Technology (95%) and social sciences (5%)
Revised by:	Director of Education Feb 16, 2016	Subject group:	DT1
Valid From:	Aug 1, 2016	Specialised in:	G1F
Version:	2	Main field of study:	Computer Engineering
Reg number:	JTH 2016/937-313		

Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- display knowledge about different kinds of operating systems
- display knowledge of the interaction between the hardware and operating system
- demonstrate comprehension of how Windows is structured in terms of architecture, Win32, objects, memory management, file system, etc.
- demonstrate comprehension of how Linux-like operating systems are structured in terms of architecture, configuration management, process management, file system, etc.
- display knowledge about how deadlocks can arise and different strategies for handling deadlocks

Skills and abilities

- display an ability to explain how an operating system handles processes and threads, communication, synchronization, etc.
- demonstrate an ability to identify problems that can arise in inter-process communication and how to avoid these problems using semaphores, monitors, etc.
- demonstrate an ability to find, analyse, and present relevant research in operating system theory

Judgement and approach

- demonstrate the ability to use different methods to determine if scheduling is possible

Contents

The course covers the theories behind operating systems, how they work and how they are handled.

The course covers the following topics:

- Concepts and terminology
- Operating systems for particular purposes
- Processes and threads
- Scheduling

- Memory management
- File systems
- Input/Output
- Deadlock
- Operating system research

Type of instruction

The course will consist of lectures, lab work and project work.

The teaching is conducted in English.

Prerequisites

General entry requirements and completion of the course Introduction to programming, 9 hp (or the equivalent).

Examination and grades

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Examination ¹	3 credits	5/4/3/U
Laboratory work and project work	3 credits	U/G

¹ Determines the final grade of the course, which is issued only when all course units have been passed.

Course literature

The literature list for the course will be provided one month before the course starts.

Titel: Modern Operating Systems

Författare: Andrew S. Tanenbaum

Förlag: Prentice Hall

ISBN: 978-0136006633