GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2023-2024

Operating Systems (E019010)

Course size *(nominal values; actual values may depend on programme)*

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2023-2024

A (semester 1)	Dutch	Gent	lecture
			seminar
			practical

Lecturers in academic year 2023-2024

De Bosschere, Koen	TWO6	lecturer-in-charge
Coppens, Bart	TWO6	co-lecturer

Offered in the following programmes in 2023-2024	crdts	offering
Bachelor of Science in Engineering(main subject Computer Science Engineering)	6	A
Bachelor of Science in Computer Science	6	A
Preparatory Course Master of Science in Bioinformatics(main subject Engineering)	6	A

Teaching languages

Dutch

Keywords

process management, memory management, system management, security

Position of the course

This course builds on the knowledge acquired in the computer architecture course. It teaches the basic principles of the internal organisation, the programming model and the use of modern operating systems.

Contents

- Operating systems: Overview, Process management, Synchronisation, Main memory management, File and disk management, Unix commands, Command shell, Scheduling, File systems, Device drivers, Virtualization, Protection and security
- System management: Domains of system management, Production processes and support, Unix, Windows
- Some other systems: Real-time systems, Fault tolerant systems, Parallel an distributed systems
- The thriumph of the nerds. Documentary about the pc's history.

Initial competences

Programming in C, computer architecture

Final competences

1 To know the history of operating systems
2 To have insight in process management
3 To correctly use synchronization primitives
4 To understand memory management
5 To understand input/output
6 To understand virtualization
7 To have insight in protection and protection mechanisms

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Seminar, Lecture, Practical

Extra information on the teaching methods

Practicals make use of the student's laptop.

Learning materials and price

Annotated slides and lab assignments freely available in the electronic learning environment

References

- A. Silberschatz en P. Galvin, Operating System Concepts with Java, Addison Wesley.
- Andrew S. Tanenbaum, Modern Operating Systems, Prentice Hall.
- Bill Stallings, Operating Systems: Internals and Design Principles, Prentice Hall.

Course content-related study coaching

Teaching staff.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment

Examination methods in case of periodic assessment during the second examination period

Oral assessment

Examination methods in case of permanent assessment

Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

PE1: written closed-book assessment.
PE2: oral closed-book assessment, written preparation at blackboard.
NPE: evaluation of practical report.

Calculation of the examination mark

First examination period: NPE counts for 20% of the total score; no participation results in a zero for that part. The student must pass for the exam in order to pass for the course. If the student does not pass for the exam, the exam score becomes the end score.

Second examination period: same rule (the scores for the lab sessions are kept).

Facilities for Working Students

There is no compulsory presence during the semester.