

Operating Systems (E019010)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
Credits 6.0 Study time 180 h Contact hrs 60.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	Gent	teaching method	hours
			seminar: coached	12.5 h
			exercises	
			practicum	17.5 h
			lecture	30.0 h

Lecturers in academic year 2020-2021

De Bosschere, Koen TW06 lecturer-in-charge

Offered in the following programmes in 2020-2021

programme	crdts	offering
Bachelor of Science in Engineering (main subject Computer Science Engineering)	6	A
Bachelor of Science in Computer Science	6	A
Bachelor of Science in Computer Science Engineering	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
- System management: Domains of system management, Production processes and support, Protection, Unix, Windows
- Some other systems: Real-time systems, Fault tolerant systems, Parallel and distributed systems
- The triumph 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 know the most important system management processes

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

Lecture, practicum, seminar: coached exercises

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.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination with open questions

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

Oral examination

Examination methods in case of permanent evaluation

Assignment, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

First chance: written closed-book exam, theory and exercises.

Second chance: oral closed-book exam, written preparation. During semester: graded lab sessions.

The lab sessions are spread throughout the semester

Calculation of the examination mark

The lab sessions count for 20% of the total score in the first examination period and 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.

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