Level: bachelor

Course title: Operating systems 1 (course id: I051)

Status: obligatory

ECTS: 8

Requirements: completed course in Object-oriented programming (course id: I032)

Learning objectives

To introduce students to the basic concepts of operating systems, processes and process management, memory management, external memory management, and file systems.

Learning outcomes

Minimum: At the end of the course, successful students should be able to understand the concepts, algorithms, structure and principles of modern operating systems.

Desirable: At the end of the course, successful students should be able to understand and apply concepts, algorithms, structure and principles of modern operating systems.

Syllabus

Theoretical instruction

The role and development of operating systems. History and types of operating systems. Programming languages suitable for implementation of operating systems. Concurrent programming. Processes and process management. The concept of the process and process states. The process implementation. Interprocess communication and synchronization. Process communication. Process scheduling. Memory management. Managing available internal memory. Organization and management of virtual memory. File Management. The structure of files and directories. File systems.

Practical instruction

Concurrent programming and interprocess communication and synchronization. Simulation of typical algorithms for operating systems.

Weekly teaching load

Lectures: 2	Exercises: 2	Practical Exercises: 1	Student research: 0	Other: 0