

Title Operating systems	Code 1010331421010330619
Field Computer Science	Year / Semester 1 / 2
Specialty -	Course core
Hours Lectures: 2 Classes: - Laboratory: 1 Projects / seminars: -	Number of credits 3
	Language polish

Lecturer:

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Status of the course in the study program:

Obligatory course, field Computer Science.

Assumptions and objectives of the course:

Description of the concepts that underlie operating systems with examples that pertain to the most popular operating systems, including: Unix, Linux and Windows.

Contents of the course (course description):

Operating-system structures. Process Concept. Threads and Concurrency. CPU scheduling: Scheduling Criteria, Scheduling Algorithms. Job scheduling. Process management and Interprocess Communication. Process synchronization: The Critical-Section Problem, Synchronization Hardware, Semaphores, Regions and Monitors, Classic Problems of Synchronization. Deadlocks. Memory management: Contiguous Memory Allocation, Paging, Segmentation. Virtual memory. File management: File-System Structure, File-System Implementation, Allocation Methods, Free-Space Management. I/O systems: I/O Hardware, Transforming I/O Requests to Hardware Operations. Protection and security: Access Matrix, Access Control List, User Authentication. Case studies.

Introductory courses and the required pre-knowledge:

Computer-system structures.

Courses form and teaching methods:

Lectures illustrated with slides, laboratory exercises.

Form and terms of complete the course - requirements and assessment methods:

Exercises and tests.

Basic Bibliography:

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Additional Bibliography:

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