

Title <b>Operating systems</b>	Code <b>1010332411010330674</b>
Field <b>Computer Science</b>	Year / Semester <b>1 / 1</b>
Specialty -	Course <b>core</b>
Hours Lectures: <b>1</b> Classes: -    Laboratory: <b>1</b> Projects / seminars: <b>1</b>	Number of credits <b>5</b>
	Language <b>polish</b>

**Lecturer:**

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**Status of the course in the study program:**

obligatory

**Assumptions and objectives of the course:**

The student should obtain knowledge of fundamental models, evaluation criteria and design principles of secure operating systems.

**Contents of the course (course description):**

Lectures

Models of security for operating systems (access matrix, Bell-LaPadula, Biba Dion), secure operating systems design principles (process protection, file access control, user authentication, audit, covert channel problem), classifications and evaluation criteria for operating systems security (TCSEC, ITSEC, ISO 15408), security functions in exemplary operating systems (MS Windows XP, Unix), additional security mechanisms (intrusion detection systems, firewalls), security testing.

Laboratory

Laboratorium

1. Authentication: configuration and testing
2. Password security analysis: project, programming and testing
3. Access control system: configuration and testing
4. Audit system: configuration and testing
5. Log analysis: project, programming and testing
6. Intrusion Detection System: configuration and testing
7. Intrusion Prevention System: configuration and testing
8. Firewall: configuration and testing
9. Security scanner: project, programming and testing
10. File encryption system: configuration and testing

**Introductory courses and the required pre-knowledge:**

Basic knowledge of operating systems, computer networks, mathematics and computational complexity.

**Courses form and teaching methods:**

Lectures with multimedia presentation, laboratory, project

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

exam, laboratory assesment, project assesment

**Basic Bibliography:**

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**Additional Bibliography:**

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