

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Computing and Informatics		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Operating Systems		
Lecturer (for lectures)		Stojanović H. Dragan		
Lecturer/associate (for exercises)		Stanimirović S. Aleksandar, Predić B. Bratislav		
Lecturer/associate (for OFE)		Davidović P. Nikola, Stojnev Ilić I. Aleksandra, Jovanović D. Martin		
Number of ECTS		6	Course status (obligatory/elective)	Obligatory
Prerequisites				
Course objectives		Acquiring knowledge about fundamental concepts and principles of modern operating systems, as well as their structure, functionality and components.		
Course outcomes		Theoretical and practical knowledge about concepts, internal design and implementation of modern operating systems.		
Course outline				
Theoretical teaching		Introduction and overview of operating systems. Process management. Threads and thread management. Concurrency, mutual exclusion, synchronization and communication of processes and threads. Deadlock and starvation of processes and threads. Process and thread scheduling. Memory management. Virtual memory. U/I management and disk scheduling. File management and file system. Operating system user interface. Security and privacy in operating systems. Architecture and implementation of modern operating systems: UNIX/Linux, MS Windows, Mac OS X, etc.		
Practical teaching (exercises, OFE, study and research)		Foundations of Unix/Linux operating systems. Advanced concepts and UNIX/Linux administration. Implementation of process and thread management and scheduling. Methods, algorithms and implementation of process synchronization and communication. Implementation of methods and algorithms for memory management and page replacement strategies. Methods and algorithms for data management and implementation of file system. Methods and implementations of device drivers and U/I management.		
Textbooks/references				
1		William Stallings, Operating Systems: Internals and Design Principles, 7th edition (Translation in Serbian), CET (Pearson), 2013.		
2		S. Đorđević-Kajan, D. Stojanović, A. Stanimirović, B. Predić, Practical exercises in System software, Faculty of Electronic Engineering, Nis, 2004		
3				
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	2	1	0	0
Teaching methods		Lectures, auditive excercises, lab practicing, self studying for homeworks and projects		
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures		10	Written exam	50
Exercises			Oral exam	
Colloquia		40		
Projects				