Specification for the book of courses

Study program			Computing and Informatics	
Module			Software Engineering	
Type and level of studies			Master studies	
The name of the course			Advanced Operating Systems	
Lecturer (for lectures)			Stanimirović S. Aleksandar, Stojanović H. Dragan	
Lecturer/associate (for exercises)			Stanimirović S. Aleksandar	
Lecturer/associate (for OFE)				
Number of ECTS	4	**Course status (obligatory/elective)**		Elective
Prerequisites				
Course objectives	Comprehension of technologies, development directions, as well as design and implementation of contemporary operating systems and system software.			
Course outcomes	Theoretical and practical knowledge about advanced concepts, internal design and implementation of contemporary operating systems and system software.			
Course outline				
Theoretical teaching	Advanced concepts, algorithms, technologies and implementation of contemporary operating systems components, such as process/thread management, process synchronization and communication, memory management, U/I device drivers, file system and network services. Multimedia operating systems. Security and protection in operating systems. Distributed operating systems. System software and platforms for Bug Data processing and analysis. Operating system of mobile and embedded computers and Internet of Things systems. Operating systems for multiprocessor and parallel computing systems. Special purpose operating systems. Design and implementation of contemporary operating systems and system software. System programming of contemporary operating systems.			
Practical teaching (exercises, OFE, study and research	Practical work on design and implementation of operating system components and apropriate system software over the set of lab exercise and practical project.			
Textbooks/references				
1	William Stallings, Operating Systems: Internals and Design Principles, 7th edition (Translation in Serbian), CET (Pearson), 2013.			
2	A.S. Tanenbaum, Modern Operating Systems, 4th edition, Pearson Education/Prentice-Hall, 2014			
3	W. Richard Stevens, Stephen A. Rago, Advanced Programming in the UNIX Environment, 3rd edition, Addison-Wesley Professional, 2013.			
4	Robert Love, Linux Kernel Development (3rd Edition), Addison-Wesley Professional; 2010			
5				

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	1	0		
Teaching methods	Lectures, auditive exercises, lab practicing, independent student work on assignments and projects, student seminars.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures		**Written exam**	40
Exercises		**Oral exam**	
Colloquia	40		
Projects	20		