

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Common		
Type and level of studies		Doctoral studies		
The name of the course		Computer Controlled Systems		
Lecturer (for lectures)		Jovanović D. Zoran		
Lecturer/associate (for exercises)				
Lecturer/associate (for OFE)				
Number of ECTS	10	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives	Acquiring additional knowledge on methods of managing complex technological processes, centralized, distributed and hierarchical management. Study research work, preparation of professional-scientific work, as well as project development.			
Course outcomes	To gain knowledge about the application of computer systems in the design and realization of control systems in the process industry, management of distributed control systems and complex dislocated systems.			
Course outline				
Theoretical teaching	Problems of managing complex technological processes. Centralized management. Distributed management. Hierarchical management. Choosing real-time PCs. Input output devices. Real-time system software support. Merging computers with technological processes. Application of microcomputers in the design and implementation of control systems. Application of PLC and SCADA system in process management. Application of computers in the process industry, in the management of dislocated objects and in the management of utility systems.			
Practical teaching (exercises, OFE, study and research)	Mastering method units of theoretical teaching through the preparation of seminars and projects.			
Textbooks/references				
1	G. Olsson, G. Piani, "Computer Systems for Automation and Control", Prentice Hall, 1992.			
2	K. Erickson, J. Hedrick, "Plantwide Process Control", John Wiley and Sons, 1999.			
3				
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
3	0	0	0	0
Teaching methods	Forms of teaching (classical - lectures or mentorship - consultations) according to the number of students. With the help of scientific journals and other literature, the student deepens the teaching material, and through consultations and study research work with the teacher, the student is trained for independent writing of scientific work. The student is obliged to do the project independently.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures		Written exam		
Exercises		Oral exam		50
Colloquia				
Projects	50			