

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Control Systems		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Electronic Measurements		
Lecturer (for lectures)		Živanović B. Dragan		
Lecturer/associate (for exercises)		Pešić T. Miroљjub, Đorđević-Kozarov R. Jelena		
Lecturer/associate (for OFE)		Pešić T. Miroљjub, Đorđević-Kozarov R. Jelena		
Number of ECTS	5	Course status (obligatory/elective)	Elective	
Prerequisites				
Training students to design the measurement instrumentation and to use it properly in development, scientific-research work and its application in processes.				
Course objectives				
The capability to design the electronic measurement instruments. The capability to develop measurement methods to be applied in the electronic measurements.				
Course outcomes				
The capability to design the electronic measurement instruments. The capability to develop measurement methods to be applied in the electronic measurements.				
Course outline				
Theoretical teaching				
The general classification and characteristics of the measurement systems. The measurement methods and techniques for the calibration of the measuring instruments. The measurement systems' errors. The metrological system and traceability. The sources of the measurement signals. Viewing and recording of the signals' waveforms. The measurement of electric voltage, current and power. The measurement of frequency, phase and time interval. The measurement of signals' and systems' characteristics. The measurement of impedance, electronic circuits' and semiconductor components' parameters. The information technologies in the measurement instrumentation. Virtual instrumentation and visualization of the measurement processes. The interface systems. The measurement-information systems.				
Practical teaching (exercises, OFE, study and research)				
Realization of the laboratory exercises in which the basic measurement methods and systems are illustrated on the laboratory models.				
Textbooks/references				
1	Bagaric I. "Metrology of electrical quantities - Measurements and Measuring instruments", (in Serbian) Science, Belgrade 1996.			
2	A. Santic, "Electronic Instrumentation", (in Croatian) School book, Zagreb			
3	Clyde F. Coombs, "Electronic Instrument Handbook", Mc Graw-Hill			
4	N. Kularatna, "Digital and Analogue Instrumentation testing and measurement", The Institution of Engineering and Technology			
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	1	1	0	0
Teaching methods				
Realization of the laboratory exercises in which the basic measurement methods and systems are illustrated on the laboratory models.				
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures	5	Written exam		20
Exercises	20	Oral exam		15
Colloquia	40			
Projects				