

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Common		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Introduction to Electronics		
Lecturer (for lectures)		Mančić D. Dragan, Dimitrijević A. Marko		
Lecturer/associate (for exercises)		Mirković D. Dejan, Đorđević D. Srđan		
Lecturer/associate (for OFE)				
Number of ECTS	4	Course status (obligatory/elective)	Obligatory	
Prerequisites				
Course objectives	Explaining history of development, domains, elements and applications of electronics. Presenting basic methods of analysis and synthesis of electronic circuits.			
Course outcomes	Students will learn what are domains and perspectives of electronics, master basic concepts and principles in electronics. Students will be able to recognize electronic circuits and identify their elements, and gain fundamental knowledge about methods of analysis and synthesis of electronic circuits.			
Course outline				
Theoretical teaching	History and development of electronics. Basic concepts of electrical signals (waveform, amplitude, frequency, phase, domains). Definition of a linear and nonlinear element. The notion of an electronic circuit, elements of electronic circuits. Basic concepts of quadropoles, model and characteristics of a simple amplifier (characteristics, amplification, bandwidth, parameters, feedback). Methods of electronic analysis - simulation, verification, testing. Basic logic circuits, analysis of logic circuits. Basic concepts of complex electronic systems - integrated circuits, microcontrollers and microprocessors, FPGA. Perspectives and the future of electronics.			
Practical teaching (exercises, OFE, study and research)	The operation of the electronic circuits will be demonstrated through the examples: application of diodes, application of logic circuits, application of amplifiers and application of microcontrollers. The operations of the presented circuits are analyzed in a comparative manner using different analytical methods in electronics in graphic and intuitive way – by simulation and measurement of the signal.			
Textbooks/references				
1	V. Drndarević, The Elements of Electronics – Diodes, Transistors and Operational Amplifiers (in Serbian), ETF - Akademska misao, Beograd, 2015.			
2	V. Litovski, Basic Electronics – Theory, Solved Examples and Exams (in Serbian), Akademska misao, Beograd, 2006.			
3	A.Sedra, K.Smith, Microelectronic Circuits, Oxford University Press, 2009.			
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
1	1	0	0	1
Teaching methods	Lectures; excercises; laboratory demonstrations; consultations			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures		Written exam		
Exercises		Oral exam		40
Colloquia	60			
Projects				