

Course Unit Descriptor

Study Programme: Power, Electronic and Telecommunication Engineering (Measurement systems)			
Course Unit Title: Electronic Components in Instrumentation			
Course Unit Code: EIEKI			
Name of Lecturer(s): Boris Antić			
Type and Level of Studies: Bachelor level			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): summer			
Language of instruction: english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: none			
Course Aims: Acquiring basic knowledge in the field of elements of electronic measurement devices.			
Learning Outcomes: Introduction to the real elements of the electronic measurement devices. Ability to design electronic measurement devices considering parasitic effects and imperfections of components used.			
Syllabus: Model of real components of electronic measurement devices. Resistor. Capacitor. Coil. Transformer. Electromechanical components. Piezoelectric devices. Electrical contacts, switches and connectors. The real characteristics of elements with P-N junction – diodes and transistors. Fundamemntal parameters of basic active electronic components: operational amplifier, comparator, voltage regulator, A/D and D/A converters. Printed circuit board. Hidden scheme. Parasitic effects and their impact on the quality of measurements. Production technology of electronic and microelectronic components. Reliability of electronic and microelectronic elements and circuits. Special purpose devices (thyristors, LEDs, photodiodes, Hall&Hall elements, tunnel and Zener diodes, HEMT, MODFET, semiconductor lasers).			
Required Reading: Relevant literature in English TBD			
Weekly Contact Hours: 2		Lectures: 2	
Practical work: 0			
Teaching Methods: Lectures. Laboratory Practice			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Laboratory exercise defense	30	Written part of the exam	40
		Oral part of the exam	30
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			