

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		Metrology of Electrical Quantities		
Lecturer (for lectures)		Denić B. Dragan		
Lecturer/associate (for exercises)				
Lecturer/associate (for OFE)				
Number of ECTS		10	Course status (obligatory/elective)	Elective
Prerequisites	No			
Course objectives	Foundation of knowledge from theoretical, legislative and applied metrology and development of capability for critical scientific approach in research and development of project tasks from area related to the metrological assurance of electrical and electronic products quality, capability for tracking the modern literature in these areas and for presentation of technical ideas and innovations to the scientific public.			
Course outcomes	Complete understanding of scientific methods in development and presentation of new solutions and contribution in development of materialisation and reproduction of measures and measurement methods, with achieved results in the scientific and professional public by means of published papers.			
Course outline				
Theoretical teaching	Measurement and metrology. Development of measurement units system. Physical constants. National and international metrological institutions. Measurement and measuring methods. Analysis of sources for errors and interferences in measurement. Metrological characteristics of measuring resources. Calibration and comparison of measurement standards - traceability. Methods for processing of measurement results and determination of measurement uncertainty. Using of computer components in metrology for gathering, processing and communication of measurement and information data.			
Practical teaching (exercises, OFE, study and research)				
Textbooks/references				
1	P. Pravica, I. Bagarić, "Metrology of Electrical Quantities - General Part" (in Serbian), Nauka, Belgrade.			
2	S. Tumanski, "Principles of Electrical Measurements", Taylor & Francis Group, 2006.			
3	P. Sydenham, "Handbook of Measurement Science", John Wiley & Sons, Ltd.			
4	International professional journals: Metrology, Instrumentation and Measurement, Measurement Science and Technology, Measurement Science Review, etc.			
5	Professional publications of international metrological organizations and institutions.			
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	Systematization of relevant publications, analysis of selected chapters, making of seminar paper, participation in realization of project tasks and preparation of scientific papers for publication at conferences and journals.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam	Points	
Activity during lectures	0	Written exam	30	
Exercises	0	Oral exam	30	
Colloquia	0			
Projects	40			