

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Electrical Power Engineering		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Power Quality		
Lecturer (for lectures)		Korunović M. Lidija		
Lecturer/associate (for exercises)		Anastasijević B. Ivan		
Lecturer/associate (for OFE)		Anastasijević B. Ivan		
Number of ECTS	6	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives	Introducing the importance of power quality and basic terms in this area to the students. Introducing the causes and effects of disrupted power quality to students. Consideration of the actions for maintenance of desired power quality and existent standards in this area.			
Course outcomes	Students understand the term power quality. Students are habilitated to measure power quality indices by themselves in the laboratory and in the field. Additionally, they are habilitated to calculate and analyse these indices in accordance with existing standards, and suggest the procedures for power quality improvement and the elimination of the consequences that inadequate power quality causes in electric power network.			
Course outline				
Theoretical teaching	Power quality in up to date electric power systems. Power quality indices: voltage variations, frequency variations, unbalance, transients, voltage sags, voltage swells, short interruptions, overvoltages, undervoltages, interruptions, harmonics, interharmonics, notches, flicker and noise. Sources of particular power quality indices. Damages due to disrupted power quality and actions for the maintenance of desired power quality. Standards regarding power quality.			
Practical teaching (exercises, OFE, study and research)	During computing exercises students solve computational tasks regarding theoretical matter, while during laboratory exercises they measure power quality indices in the laboratory, explain measurement results using computer and compare them with existing standards.			
Textbooks/references				
1	L. M. Korunović, Power Quality (in Serbian), textbook, Faculty of Electronic Engineering, Niš, 2014.			
2	M. C. Векић, В. А. Катић, З. Чорба, Power Quality - Computing and Laboratory Exercises, auxiliary textbook, Faculty of Technical Sciences, Novi Sad, 2018.			
3	V. Katić, Power Quality - Higher Harmonics (in Serbian), memoir, Faculty of Technical Sciences, Novi Sad, 2002.			
4	M. M. Kostić, Reactive Energy Compensation and Higher Harmonics in Electric Networks (in Serbian), memoir, Electrical Engineering Institute Nikola Tesla, Belgrade, 2014.			
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	Theoretical teaching includes classic lectures and lectures in electronic form. Practical teaching includes solution of computational tasks, measurements in laboratory and the analysis of measurements using computer.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures		Written exam		50
Exercises		Oral exam		20
Colloquia				
Projects	30			