

Study program: Electrical and Computing Engineering				
Type and level of studies: Doctoral studies (third level of studies)				
Course unit: Regulation and Control of Electric Power Distribution Systems				
Teacher in charge: Aleksandar Ranković				
Language of instruction: English				
ECTS: 15				
Prerequisites: -				
Semester: Summer				
Course unit objective				
The students acquire knowledge in the areas of electric power distribution systems, reactive power and voltage regulation. The students should master new theories and new methods in the subject area.				
Learning outcomes of Course unit				
<ul style="list-style-type: none"> • Capacity to apply knowledge of concepts and principles of regulation and control of electric power distribution systems • Ability to demonstrate an understanding of the functions of power and voltage regulation. • Ability to use a Distribution Management System (DMS) 				
Course unit contents				
<i>Theoretical classes</i>				
Introduction (distribution network design, technical and economic analysis, etc.). Telemetry. Development Systems and remote transmission of information recorded in measurement equipments. Supervisory Control And Data Acquisition (SCADA). State estimation. Real-time voltage regulation. Reconfiguration of electric distribution networks. Power restoration in the distribution system.				
<i>Practical classes</i>				
Processing and analyzing project results.				
Literature				
[1] T. Gonen, <i>Electric Power Distribution System Engineering</i> , Second Edition, CRC Press, USA, 2007.				
[2] E. Lakervi and E. Holmes, <i>Electricity Distribution Network Design</i> , Second Edition, IEE, United Kingdom, 1995.				
[3] G. Fusco and M. Russo, <i>Adaptive Voltage Control in Power Systems</i> , Springer, 2007.				
[4] T. A. Short, <i>Electric Power Distribution Equipment and Systems</i> , CRC Press, 2006.				
[5] B. Pal and B. Chaudhuri, <i>Robust Control in Power Systems</i> , Springer, 2005.				
Number of active teaching hours				Other classes
Lectures: 3	Practice: 5	Other forms of classes	Independent work: 2	
Teaching methods Lessons, consultations, study and research work				
Examination methods (maximum 100 points)				
Exam prerequisites	No. of points:	Final exam	No. of points:	
Student's activity during lectures	5	oral examination	50	
Practical classes/tests	15	written examination		
Seminars/homework	-		
Project	30			
Other				
Grading system				
Grade	No. of points	Description		
10	91-100	Excellent		
9	81-90	Exceptionally good		
8	71-80	Very good		
7	61-70	Good		
6	51-60	Passing		
5	less than 50	Failing		