

Faculty of Electrical Engineering / /

Course:				
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
12779	Mandatory	2	5	3+1+1
Programs				
Prerequisites	There are no prerequisites with other subjects.			
Aims	This course introduces students to the role, types, and characteristics of grounding systems for facilities and elements in the power system. Special attention is given to the design of protective, working, and lightning grounding. Additionally, various methods for measuring characteristic parameters of grounding systems are studied, along with the influence of different factors on the obtained values.			
Learning outcomes	Upon completion of this course, the student will be able to: 1. Understand the significance, location, role, and types of grounding systems. 2. Explain the impact of soil characteristics on grounding systems. 3. Describe the effects of currents on the human body. 4. Implement acquired knowledge in the design and implementation of protective grounding for high-voltage distribution facilities. 5. Explain methods for measuring characteristic parameters of grounding systems. 6. Apply different grounding models in both steady-state and transient regimes. 7. Design and analyze lightning protection and grounding systems. 8. Explain and analyze grounding systems for overhead transmission line poles.			
Lecturer / Teaching assistant	Vladan Radulović, PhD - professor, Miloš Jelovac, MSc - assistant			
Methodology	Lectures, computational exercises			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Definitions and classifications of grounding systems. Design of grounding systems.			
I week exercises	Selection of grounding type. Defining initial conditions for the calculation of grounding systems			
II week lectures	Soil characteristics.			
II week exercises	Analysis of the effects of soil characteristics on the value of ground specific resistance.			

XIII week lectures	Measurement of characteristic parameters of grounding systems.					
XIII week exercises	Analysis and interpretation of measurements of characteristic parameters of grounding systems.					
XIV week lectures	Power grounding. Grounding of transmission line towers.					
XIV week exercises	Determination of characteristic parameters of power grounding and grounding of transmission line towers.					
XV week lectures	Transient characteristics of grounding systems.					
XV week exercises	Calculation of transient characteristics of grounding systems.					
Student workload						
Per week			Per semester			
5 credits x 40/30=6 hours and 40 minuts 3 sat(a) theoretical classes 1 sat(a) practical classes 1 excercises 1 hour(s) i 40 minuts of independent work, including consultations			Classes and final exam: 6 hour(s) i 40 minuts x 16 =106 hour(s) i 40 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 6 hour(s) i 40 minuts x 2 =13 hour(s) i 20 minuts Total workload for the subject: 5 x 30=150 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 30 hour(s) i 0 minuts Workload structure: 106 hour(s) i 40 minuts (courses), 13 hour(s) i 20 minuts (preparation), 30 hour(s) i 0 minuts (additional work)			
Student obligations			Students are required to attend classes and complete seminar papers/exams.			