

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		Electric Power Transmission		
Lecturer (for lectures)		Tasić S. Dragan		
Lecturer/associate (for exercises)		Stojanović S. Miodrag, Anastasijević B. Ivan		
Lecturer/associate (for OFE)				
Number of ECTS	6	Course status (obligatory/elective)	Obligatory	
Prerequisites				
Course objectives	Introducing with the basics of transmission networks, planning and exploitation of electric power systems. Analysis of normal and disordered operating regimes in power systems.			
Course outcomes	Acquired knowledge about electric power transmission and power system operation as a whole.			
Course outline				
Theoretical teaching	Electric power system. Power line as an element of power system. Mechanical calculations of overhead power lines. Electric parameters of power lines. Telegrapher's equations. Equivalent circuit models of power lines. Steady state regime calculations of power lines. Active and reactive power balance. Power transformer as an element of power system. Equivalent circuit models of power transformer. Conversion of parameters. Synchronous generator as an element of power system. Basic parameters. Vector diagrams. Generator operation in normal regimes. P-Q diagram of synchronous generator. Short-circuits in electric power networks. Symmetrical components. Positive-sequence, negative-sequence and zero-sequence parameters of the power system elements. Currents and voltages during the fault. Grounding of power system neutrals.			
Practical teaching (exercises, OFE, study and research)	Auditory exercises in power system elements calculation, equivalent circuits parameters, steady state regimes, short-circuits.			
Textbooks/references				
1	D. Stojanović, Electric Power Transmission, Press Series: Textbooks, Faculty of Electronic Engineering, Niš, 2008. (in Serbian)			
2	D. Tasić, Power Systems and Networks Analysis, Press Series: Textbooks, Faculty of Electronic Engineering, Niš, 2010. (in Serbian)			
3	D. Stojanović, L. Korunović, Electric Power Transmission and Distribution - Collection of Solved Problems, SX Print Copy, Niš, 2004. (in Serbian)			
4	T. Gönen, Electric Power Transmission System Engineering Analysis and Design, CRC Press, Taylor & Francis Group, 2009			
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
3	2	0	0	0
Teaching methods	Lectures, auditory exercises, consultations, videos, visits to power substations and power plants.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures	5	Written exam		30
Exercises		Oral exam		25
Colloquia	40			
Projects				