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	Groundings		
Lecturer (for lectures)	Tasić S. Dragan, Cvetković N. Nenad		
Lecturer/associate (for exercises)	Cvetković N. Nenad		
Lecturer/associate (for OFE)			
Number of ECTS	5	**Course status (obligatory/elective)**	Elective
Prerequisites			
Course objectives	The aim of the course is to familiarize students with the characteristics and types of groundings, as well as with the methods for the calculation and measurement of grounding systems characteristics.		
Course outcomes	Students will be trained to work on calculation of groundings EM characteristics, measurement and verification of characteristics of grounding systems realized in practice.		
Course outline			
Theoretical teaching	Definition of basic terms, classification and basic characteristics of earthings and groundings. Grounding electrodes types classification by shape and purpose. The electrical parameters of the ground and modeling of non-homogeneous soil. Overhead and cable lines as parts of the grounding systems. General electrical characteristics of earthing system. Materials for producing earthing systems conductors. Dimensioning the conductors of the earthing system. Methods for calculating EM earthing systems characteristics. Methods for measurement and periodical verification of the grounding systems characteristics.		
Practical teaching (exercises, OFE, study and research	Auditory exercises from groundings and earting systems calculations		
Textbooks/references			
1	J. Nahman, Neutral Grounding of Distribution Networks, Naučna knjiga, Beograd 1980. (in Serbian)		
2	J. Surutka, Electromagnetics, Gradjevinska knjiga, Belgrade, 2006 (in Serbian)		
3	J. Nahman, V. Mijailović, Selected chapters from power plants, School of Electrical Engineering ande Akademska misao, Belgrade, 2002. (in Serbian)		
4	Technical Recommendation of Electric Power Industry of Serbia No. 5, 7, 9. (in Serbian)		
5	N. Tleis, Power Systems Modelling and Fault Analysis – Theory and Practice, Elsevier Ltd., 2008.		

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	2	0	0	0
Teaching methods	Lectures, exercises, homework, consultations.			

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			