Specification for the book of courses

Study program	Electrical Engineering and Computer Science		
Module	Common		
Type and level of studies	Undergraduate Academic Studies		
The name of the course	Fundamentals of Theoretical Electrical Engineering 1		
Lecturer (for lectures)	Cvetković Ž. Zlata, Raičević B. Nebojša, Cvetković N. Nenad, Perić T. Mirjana, Vučković N. Ana		
Lecturer/associate (for exercises)	Perić T. Mirjana, Vučković N. Ana, Živaljević U. Dragana, Ilić S. Saša, Nikolić Z. Bojana, Jovanović B. Dejan, Jovanović B. Dragana		
Lecturer/associate (for OFE)			
Number of ECTS	7	**Course status (obligatory/elective)**	Obligatory
Prerequisites			
Course objectives	The aim of the subject is that students gain knowledge of the basic laws of electrostatics and to familiarize them with fundamental concepts, analysis methods, and theorems of d.c. circuits.		
Course outcomes	Students who successfully adopt the course material will be capable of following other specialized courses. They will be able to, for example, calculate the capacitance of simple homogeneous symmetric structures, to solve simple and complex circuits with direct currents, to calculate the maximum value of the power of circuit elements and protect them from burning out.		
Course outline			
Theoretical teaching	Electrostatics (Charges and their distribution. Coulomb's law. Electric field strength vector. Gauss's law. Electric potential and voltage. Conductors in the electrostatic field. Capacitance and capacitors. Dielectrics in the electrostatic field. Boundary conditions. Energy and forces in the electrostatic field). Steady currents (Current density vector and current intensity. Ohm's law and resistors. Joule's law. Kirchhoff's laws. Generators. Maximum power transfer theorem. Methods for solving electrical circuits. Superposition theorem. Thévenin's theorem and Norton's theorem. Compensation theorem. Reciprocity theorem. Electric circuits with capacitors).		
Practical teaching (exercises, OFE, study and research	During the practical lectures, numerical problems of electrostatics and d.c. currents, covering areas from theoretical subject contents, are solved.		
Textbooks/references			
1	Dragutin N. Mitić, “Fundamentals of Electrical Engineering 1” (in Serbian), Petrograf, Niš, 2007.		
2	Dragutin N. Mitić, “Collection of problems for Fundamentals of electrical engineering 1” (in Serbian), Petrograf, Niš, 2007.		
3	Everett M. Strong: "Electrical Engineering Basic Analysis", John Wiley and Sons, 1947.		
4			
5			

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
3	3	0	0	0
Teaching methods	Lectures and problem-solving classes, homeworks, consultations.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	20	**Written exam**	30
Exercises		**Oral exam**	30
Colloquia	20		
Projects			