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	Transient Analysis of Electrical Machines		
Lecturer (for lectures)	Stajić P. Zoran		
Lecturer/associate (for exercises)	Radić M. Milan		
Lecturer/associate (for OFE)	Radić M. Milan, Banković G. Bojan		
Number of ECTS	5	**Course status (obligatory/elective)**	Elective
Prerequisites			
Course objectives	Introduce students to the mathematical models of electric machines, methods of analysis and software package for simulation of transient regime.		
Course outcomes	The capability of making mathematical models of electric machines suitable for computer analysis and the ability to study the transient electric machines.		
Course outline			
Theoretical teaching	Basic principles for the analysis of magnetically coupled circuits. Reference frame theory. Symmetrical induction machines. Symmetrical synchronous machine. Operational impedance and time constants of synchronous and induction machine. Linearized equations of induction and synchronous machines. Unbalanced operation of symmetrical induction and synchronous machines. Operating regimes and disturbances under electrical machines exploitation. Computer simulation of induction and synchronous electrical machine transients. Electrical machine transients and model parameters identification.		
Practical teaching (exercises, OFE, study and research	Analysis of induction and synchronous machines based on a mathematical model. Computer methods of analysis and simulation. Experimental verification of mathematical models for different types of machines in the laboratory.		
Textbooks/references			
1	V. Vučković, ”General theory of Electrical machines”, Science, Belgrade, 1992. (In Serbian)		
2	S. Vukosavic, Electrical Machines”, Academic mind, Belgrade, 2010. (in Serbian)		
3	P. C. Krause, O. Wasynczuk, S. Sudhoff, ”Analysis of Electric Machinery and Drive Systems”, IEEE Press 2002		
4			
5			

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	1	2	0	0
Teaching methods	Classes are conducted through lectures and exercises. Lectures use modern teaching methods. Auditory exercises with numerous examples refer students to independently solve problems from engineering practice. Part of the exercise is performed in the laboratory.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	5	**Written exam**	20
Exercises	10	**Oral exam**	25
Colloquia	40		
Projects			