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	Testing of Electrical Machines		
Lecturer (for lectures)	Stajić P. Zoran		
Lecturer/associate (for exercises)	Stajić P. Zoran		
Lecturer/associate (for OFE)	Radić M. Milan, Banković G. Bojan		
Number of ECTS	6	**Course status (obligatory/elective)**	Obligatory
Prerequisites			
Course	Gaining knowledge about the program and the procedures for testing of electrical machines.		
Course outcomes	Students get theoretical and practical ability to perform the most important experiments on the electrical machinery and to process the experimental results.		
Course outline			
Theoretical teaching	Classification of tests performed on electrical machines. The test program for transformers, DC machines, induction machines and synchronous machines. Measurement of winding resistance and insulation. Insulation testing byapplied and induced voltage. Regenerative and direct methods for loading of electric machines. Measurement of speed and torque. Temperature rise test. Measurement of winding temperature. No-load and short-circuit test on induction machine. Determination of starting characteristics and variables in equivalent circuit. Segregation of power losses. No-load and short-circuit test on synchronous machine. Determination of synchronous machine reactances. Acceleration, retardation and overspeed tests.		
Practical teaching (exercises, OFE, study and research work)	Problems following lectures are solved on auditory exercises, including processing and interpretation of the results obtained by practice. Laboratory exercises are performed on real machines, involving insulation tests, vector group and winding terminals checking on a three-phase transformer, transformer temperature rise test, regenerative tests on DC machines, recording performance characteristics of induction machines using direct loading method, short-circuit test of induction macnine at low frequency and at rated voltage, segregation of no-load loses, winding terminals checking on induction machine, determining the rotor moment of inertia from retardation test, no-load and short-circuit test on synchronous generator and synchronous machine parameters identification		
Textbooks/references			
1	B. Mitraković, „Testing of electrical machines“, Scientifitic book, Belgrade, 1991. (In Serbian)		
2	M. Petrović, „Testing of electrical machines“, Academic mind, Beograd, 2000. (In Serbian)		
3	V. Petrović, „Testing of electrical machines - exercises“, Građevinska book, Belgrade, 1974. (In Serbian)		
4	P. Gill, "Electrical Power equipment Maintenance and Testing", CRC Press, 2008.		
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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	Lectures and auditory exercises are performed on blackboard; Laboratory exercises are performed on real machines where students work independently, with supervision. Consultations.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	5	**Written exam**	20
Exercises	15	**Oral exam**	20
Colloquia	40		
Projects			