	Course name: EE330 Electromechanical Energy Conversion II Laboratory		**Department:** Electrical and Electronics Engineering			Semester
						5
	Methods of Education					Credit (ECTS)
	Lecture	Study Time	Homework	Exam (incl. Preparation)	Total	1
	42	23	20	15	100	
Language	English					
Compulsory/Elective	Restricted Elective					
Prerequisites	EE320					
Course Contents	AC electric machine windings and rotating loops. Three-phase induction machines: equivalent circuit, steady-state analysis. DC machines (Generators and Motors): equivalent circuit, steady-state analysis.					
Course Objective	- Students will be able to comprehend the role of AC and DC machine operation principles, analysis and design of magnetic circuits in the laboratory.					
Learning Outcomes and Competences	**Students who pass the course will be able to:** - Make experiment study about the principle of AC machines. - Make experiment study about analysis of flux linkage, inductance, rotating magnetic field, AC excitation, permanent magnets. - Make experiment study about Induction machines. - Make experiment study about performance calculations: voltage regulation and efficiency. - Make experiment study about three phase induction machine tests and parameter calculation. - Make experiment study about DC machines. - Make experiment study about the DC machine tests and parameter calculation. -					
Textbook and /or References	1- ELECTRIC MACHINERY FUNDAMENTALS, 5th EDITION, Stephen J. Chapman 2- E. Fitzgerald, Charles Kingsley, Jr., and Stephen D. Umans, Electric Machinery, Sixth Edition, McGraw-Hill, 2003.					
Assessment Criteria		If any, mark as (X)	Percentage (%)			
	Midterm Exams					
	Quizzes	X	30			
	Homework	X	20			
	Projects					
	Term Paper					
	Laboratory work	X	50			
	Other					
	Final Exam					
Instructors	Prof. Dr. Ahmet KARAARSLAN					

Weekly Schedule

Week	Subject
1	Introduction and Laboratory Equipment
2	Working principle of Laboratory Experimental Kits
3	No-load and locked rotor tests on an induction motor
4	Determination of the induction motor parameters
5	Efficiency, Load and Line Regulation calculation and test of induction motor
6	Induction motor torque etc. speed characteristics
7	The effect of stator voltage and added rotor resistance

8	The effect of stator voltage and added rotor resistance (cont.)
9	**Mid-term Exam**
10	The experimental study of DC Machines: Motors and Generators
11	Series DC Motor experimental tests
12	Shunt DC Motor experimental tests
13	Compound DC Motor experimental tests
14	Differential and Cumulative Compound DC Motor experimental tests
15	Control methods of DC and AC machines: speed control