

COURSE DESCRIPTION CARD

Faculty of Electrical Engineering										
Field of study	Electrical and Electronics Engineering							Degree level and programme type	bachelor's degree, full time programme	
Specialization/ diploma path	-							Study profile	-	
Course name	Electrical Machines 2							Course code	IS-FEE-10029S	
								Course type	elective	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	summer	
	30		30					No. of ECTS credits	6	
Entry requirements	Electrical Machines 1									
Course objectives	Achievement of skills of analysis of DC and synchronous machines.									
Course content	DC machines: construction, principles of operation, mathematical model. Direct current machine systems. Steady state with different conditions of power supply and load. Synchronous machines: construction, principles of operation and mathematical models. Torque of synchronous machines. Generators and motors.									
Teaching methods	lecture, laboratory class									
Assessment method	lecture: written exam; laboratory class: evaluation of reports, verification of preparation for classes.									
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study		
LO1	selects the measurement methods for basic research of electrical machines, analyzes test results, assesses the state of saturation of the magnetic circuit;									
LO2	selects speed control methods for DC machines, interprets the behavior of the DC machines for various values of supplying voltages and load torque;									
LO3	interprets influence of changes in the excitation current and load torque for synchronous generators and DC machines;									
LO4	describes the actual status and construction development trends in electrical machines;									
LO5	associates the connection of electrical machines with other areas of knowledge in the discipline of electrical engineering;									

LO6	can work in an organized laboratory group.	
LO7		
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
LO1	evaluating student's preparation for laboratory tests, exam	L, LC
LO2	evaluating student's preparation for laboratory tests, exam	L, LC
LO3	evaluating student's preparation for laboratory tests, exam	L, LC
LO4	exam	L
LO5	exam	L
LO6	discussion on the report of the laboratory tests, observation of work in the laboratory	LC
LO7		
Student workload (in hours)		No. of hours
Calculation	lecture attendance	30
	participation in workshop activities	30
	preparation for classes	30
	preparation for and participation in exams/tests	30
	elaboration of workshop's reports	30
	TOTAL:	150
Quantitative indicators		HOURS No. of ECTS credits
Student workload – activities that require direct teacher participation		60 2
Student workload – practical activities		90 3
Basic references	1. Morris N.: Electrical & electronic engineering principles. Longman Group, 1994. 2. Ryff P. F.: Electric machinery. Prentice Hall, New Jersey, 1988. 3. Theodore W.: Electrical machines, drives and power systems. Pearson Education, New Jersey, 2006.	
Supplementary references	1. Sen P. G.: Principles of electric machines and power electronics. J. Wiley & Sons, 1997. 2. Chapman S. J.: Electric machinery fundamentals. Mc Graw Hil, 2005. 3. Morris N. M.: Electrical and electronic engineering principles. Longman Group, 1994.	
Organisational unit conducting the course	Department of Electrotechnics, Power Electronics and Power Engineering	Date of issuing the programme
Author of the programme	Adam Solbut, Ph.D. Eng.	05.02.2020

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,

S – seminar