

## COURSE DESCRIPTION CARD – SPECIMEN

Faculty of Electrical Engineering									
Field of study	Electrical and Electronics Engineering						Degree level and programme type	Bachelor's degree	
Specialization/ diploma path	-						Study profile	-	
Course name	Introductory Physics						Course code	IS-FEE-10073S	
							Course type	elective	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	summer
			15					No. of ECTS credits	2
Entry requirements	Mathematics, Physics, Circuit Theory								
Course objectives	Students master basic physics concepts by performing an experiment relevant to corresponding work in the laboratory. Students gain hands-on experiences with experimental processes and develop effective written communication skills. Students develop collaborative learning skills by working in a group.								
Course content	Determination of the inductance of the coil. Study of the phenomenon of induction. Determination of the capacitor charging curve. Transformer testing. Generator and electric motor. Study of the electric field distribution. Study of the magnetic field of electric conductors. Measurement of magnetic induction in the electromagnet gap.								
Teaching methods	Laboratory classes, discussion								
Assessment method	An assessment of the report based on the quality of the measurements, correctness of the computations and analysis of results, clarity of discussion, correctness of answers to questions, and neatness.								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
LO1	Knows and understands the methods of measuring physical quantities, in particular those that characterize various types of the components and systems								
LO2	Assigns the relevant principles and rules for existing problems								
LO3	Uses the learned laws of physics, electricity and magnetism to solve typical physics problems								
LO4	Analyzes and solves the engineering problems with the use of the physical approach								
LO5	Carries out sample measurements and physical experiments in a self-connected electrical circuit								
LO6	Demonstrates the basic communication skills by working in the groups on laboratory experiments and the thoughtful								

	discussion and the interpretation of data	
<b>Symbol of learning outcome</b>	<b>Methods of assessing the learning outcomes</b>	<b>Type of tuition during which the outcome is assessed</b>
L01	assessment of entrance tests, reports, discussions and activity in the classroom	LC
L02	assessment of entrance tests, reports, discussions and activity in the classroom	LC
L03	assessment of entrance tests, reports, discussions and activity in the classroom	LC
L04	assessment of entrance tests, reports, discussions and activity in the classroom	LC
L05	assessment of entrance tests, reports, discussions and activity in the classroom	LC
L06	assessment of entrance tests, reports, discussions and activity in the classroom	LC
<b>Student workload (in hours)</b>		<b>No. of hours</b>
<b>Calculation</b>	laboratory classes	15
	preparation for classes	15
	work on reports (analyze, calculations, discussion)	20
	<b>TOTAL:</b>	<b>50</b>
<b>Quantitative indicators</b>		<b>HOURS</b>
		<b>No. of ECTS credits</b>
<b>Student workload – activities that require direct teacher participation</b>		<b>25</b>
<b>Student workload – practical activities</b>		<b>40</b>
		<b>1,5</b>
		<b>2</b>
<b>Basic references</b>	<ol style="list-style-type: none"> <li>1. J. Bird, Electrical Circuits. Theory and Technology, sixth edition, Routledge 2017</li> <li>2. D. Halliday, R. Resnick, Physics 1 and Physics 2, Wiley; 3rd edition</li> <li>3. Feynman R. P., Leighton R. B., Sands M, The Feynman Lectures on Physics, Basic Books; New Millennium ed. Edition</li> <li>4. N. M. MacKay, Theory of Physics, volumes 1 and 2, 2020</li> </ol>	
<b>Supplementary references</b>	<ol style="list-style-type: none"> <li>1. D. Halliday, R. Resnick, J. Walker, Fundamentals of Physics, John Wiley and Sons; 7th edition</li> </ol>	
<b>Organisational unit conducting the course</b>	Department of Electrical Engineering, Power Electronics and Electrical Power Engineering	<b>Date of issuing the programme</b>
<b>Author of the programme</b>	Anna Maria Białostocka, Ph. D.	28.02.2021

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

S – seminar