

**Subject card**

<b>Subject name and code</b>	Fundamentals of Electrical Engineering - laboratory classes , PG_00201095						
<b>Field of study</b>	Marine Hydrography						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to practical vocational preparation		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	2	<b>ECTS credits</b>			1.0		
<b>Learning profile</b>	practical	<b>Assessment form</b>			credit		
<b>Conducting unit</b>							
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr inż. Piotr Bekier				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	10.0	0.0	0.0	10
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	10		2.0		9.0	21
<b>Subject objectives</b>	Transfer of knowledge and skills in the basics of electrical engineering.						
	Mastery of the fundamental principles for the operation of electrical devices						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[HML3-U11] is able to use navigation devices, means of technical observation and communication as well as measuring instruments, as well as apply in practice various techniques of measurement and observation in the field of professional activity related to the field of study	is able to: - perform measurements of basic electrical quantities - operate basic electrical instruments and devices - work with electrical equipment	[SU3] text preparation/written work
	[HML3-U08] is able to independently use the professional literature available in traditional and electronic form, make an assessment, critical analysis and synthesis as well as the correct interpretation of the information obtained	is able to: - use appropriate documentation related to devices and installations	[SU3] text preparation/written work
	[HML3-W03] knows and understands, at an advanced level, directions of development and the latest discoveries in the field of scientific disciplines forming the theoretical basis appropriate to the field of study	knows and understands at an advanced level: - the methodology for measuring electrical quantities in direct current (DC) and alternating current (AC) systems - the similarities and differences between various types of electrical devices	[SW3] text preparation/written work
[HML3-W12] knows and understands, at an advanced level, the key processes occurring in the life cycle of devices, facilities, and technical systems	knows and understands at an advanced level: - the methodology for measuring electrical quantities in direct current (DC) and alternating current (AC) systems - the similarities and differences between different types of electrical devices	[SW3] text preparation/written work	
Subject contents	<b>Introductory Classes</b> cover circuits of direct current (DC) and alternating current (AC), focusing on understanding their principles and differences. They also include the basics of construction and operation of electrical machines and devices, providing an overview of their design, components, and functioning. Students learn techniques and tools for measuring basic electrical quantities such as voltage, current, resistance, and power. The classes introduce key electrical apparatus, including relays, circuit breakers, and transformers. A strong emphasis is placed on safety during the operation and maintenance of electrical systems, ensuring adherence to proper practices and safety standards.		
Prerequisites and co-requisites	Knowledge in the field of algebra, trigonometry of complex numbers, and the fundamentals of electromagnetism.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		61.0%	100.0%
Recommended reading	Basic literature	KURDZIEL R.: Podstawy elektrotechniki. WNT, Warszawa 1973. WYSZKOWSKI S.: Elektrotechnika okrętowa. Wydawnictwo morskie, Gdańsk 1972.	
	Supplementary literature	KOSTYSZYN R.: Elektroenergetyka okrętowa. Akademia Morska, Gdynia 2016	
	eResources addresses		
Example issues/ example questions/ tasks being completed	The questions and tasks are directly related to the content of the subject.		
Work placement	Not applicable		

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