University of Gdańsk

Subject card

Subject name and code	Principles of Electronics - laboratory classes, PG_00198789		
Field of study	Marine Hydrography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	1.0
Learning profile	practical	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	mgr inż. Przemysław Wenderholm	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	10.0	0.0	0.0	10

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	10	2.0	10.0	22

Subject objectives

Transfer of knowledge in the field of: construction, operating principles, parameters and characteristics of basic semiconductor devices, including optoelectronic devices and basic operational amplifier systems, generators, digital systems

Learning outcomes

Course outcome	Subject outcome	Method of verification
[HML3-U01] is able to plan and conduct experiments, including computer simulations, interpret the results obtained and draw conclusions	is able to: - plan and carry out measurements of static characteristic of basic semiconduktor devices - plan and research of electronic system	[SU3] text preparation/written work

Subject contents

Semiconductor materials. Semiconductor elements. Operational amplifiers. Generators. Digital systems. Measurement of static characteristics of diode. Measurement of static characteristics of unipolar transistor. Measurement of static characteristics of bipolar transistor. Research on operational amplifier. Research on oscilators. Research on basic logical devices.

Prerequisites and co-requisites

1. Knowledge of physics and mathematics at a high school level.
2. Knowledge of basic electrical engineering issues.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
report	51.0%	100.0%

Recommended reading

Basic literature	1. RUSEK W., PASIERBIŃSKI J.: Electronic components and circuits in questions and answers. WNT, Warsaw 2006.

	Supplementary literature	1. BARANOWSKI J., NOSAL Z.: Electronic circuits. Part I - Analog circuits. Helion. 2. FILIPKOWSKI A.: Analog and digital electronic circuits. Helion.
	eResources addresses	
Example issues/ example questions/ tasks being completed	To bias a diode in conduction, you must. To bias a pn junction in the reverse direction, you must.The capacitance of a capacitive diode depends on.The output characteristic of a bipolar transistor is. The operational amplifier has the following inputs. The parameters of sinusoidal waveform generators include.	
Work placement	Not applicable	

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