GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Circuits and Signals - laboratory, PG_00047566		
Field of study	Automatic Control, Cybernetics and Robotics		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Marine Electronic Systems -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Czesław Stefański	
	Teachers	dr inż. Czesław Stefański	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	15.0	0.0	0.0	15

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	15	1.0	9.0	25

Subject objectives

Equipping a student with knowledge and skills acquired in studying the basics of analogue circuits and signals. The knowledge is sought to be useful in further professional studies and practice.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W05] Knows and understands, to an advanced extent, methods of supporting processes and functions, specific to the field of study	Student - measures parameters of electrical components and circuits, - uses Fourier series to analyze circuits stimulated by periodic waveforms, - uses computer programs to analyze circuits	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[K6_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	Student - designs simple systems (dividers, attenuators, filters, inverting and non-inverting amplifiers, etc.), - linearizes non-linear elements, - uses computer programs for circuit analysis and design	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects

Subject contents

Periodic signal spectrum. Spectrum modification by passing a periodic signal through a linear and nonlinear circuit. Transmission long delay-line. Attenuator. Resonant circuit. Nonlinear cuircuit. Passive lowpass Butterworth, Chebyshev and Bessell filters, and active filters. Time-domain and frequency domain characteristics.

Prerequisites and co-requisites

No requirements

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Reports	51.0%	60.0%
Midterm short tests	51.0%	40.0%

Recommended reading

Basic literature	J. Osiowski i J. Szabatin: Podstawy teorii obwodów, tomy I-III. WNT Warszawa 1993 (tom I i tom II) i 1995 (tom III) i wydania kolejne.
Supplementary literature	No requirements
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable