GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Circuits and Signals - laboratory, PG_00048807		
Field of study	Electronics and Telecommunications		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research 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 Signals and Systems -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Jan Schmidt	
	Teachers	dr inż. Jan Schmidt	

Lesson types

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_U03] can design, according to required specifications, and make a simple device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment	Student - uses Fourier series for the analysis of circuits stimulated by periodic waveforms, - decomposes and assembles periodic waveforms for the purpose of analyzing circuits stimulated by periodic waveforms, - measures the parameters of electrical components and circuits, - linearizes nonlinear elements, - uses computer programs to analyze circuits.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment

Subject contents

Course content – laboratory
Periodic signal spectrum.
Spectrum modification by passing a periodic signal through a linear and nonlinear circuit.
Transmission 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	
Example issues/ example questions/ tasks being completed		
Practical activites within the subject	Not applicable	

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