GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Design of Functio nal Blocks for Digital Channels, PG_00048361		
Field of study	Electronics and Telecommunications		
Date of commencement of studies	February 2024	Academic year of realisation of subject	2024/2025
Education level	second-cycle studies	Subject group	Optional subject group 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 Teleinformation Networks -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	mgr inż. Jacek Litka	
	Teachers	mgr inż. Jacek Litka	

Lesson types and methods of instruction

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

Familiarize students with the practice of design of selected functional blocks of digital channels

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W05] Knows and understands, to an increased extent, methods of process and function support, specific to the field of study.	In the scope of the selected project task, the student knows and understands the principles of designing and testing selected functional blocks of a digital channel.	[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation
[K7_U06] can analyse the operation of components, circuits and systems related to the field of study; measure their parameters; examine technical specifications; interpret obtained results and draw conclusions	Based on the selected project task, the student designs and implements selected functional blocks of the digital channel, examines their parameters and characteristics, interprets the results and draws conclusions.	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[K7_W03] Knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum.	In the scope of the selected project task, the student knows and understands the structure of selected functional blocks of the digital channel and the relationship between their parameters and their characteristics and functioning.	[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation

<table>
<tr><td>Subject contents</td><td>1. Single-parameter modulator.
2. Shaping and receiving filters.
3. Synchronization in single-parameter receiver.
4. Sample rate conversion.
5. Multicarrier modulator.
6. Multicarrier demodulator.
7. Speech parameterizations.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Project</td><td>50.0%</td><td>100.0%</td></tr>
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</td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. Fuqin Xiong: Digital Modulation Techniques, Artech House, 2000</td></tr>
<tr><td>Supplementary literature</td><td>No requirements</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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