GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Radio Communication Systems - project, PG_00048134		
Field of study	Electronics and Telecommunications		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	first-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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Algorithms and Systems Modelling -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Andrzej Marczak	
	Teachers	dr inż. Andrzej Marczak	

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

Designing the network of the digital radio communication system

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K02] is ready to critically assess possessed knowledge and acknowledge the importance of knowledge in solving cognitive and practical problems	The student using the documentation of the cellular system searches the data necessary to complete the task.	[SK5] Assessment of ability to solve problems that arise in practice
[K6_U31] can identify telecommunications network architectures, differentiates their areas and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements	The student calculates the parameters of the designed cellular system network.	[SU1] Assessment of task fulfilment
[K6_W35] Knows the concepts of the technique of signal transmission, operation of telecommunications networks and multimedia services and the rules for providing them	The student knows the techniques of signal transmission used in digital cellular systems and the operation of such systems.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents

1. Calculate the area of a single hexagonal cell.
2. Calculate the number of cells in a certain area.
3. Calculating the number of channels per single cell.
4. Determination of the number of channels in the radio communication system.
5. Determination the total traffic that can be supported by a single cell based on Erlang table.
6. Determination of the number of subscribers that can be supported in the analyzed system bundle cells.
7. Calculation of the capacity of the system.

Prerequisites and co-requisites

No requirements

Assessment methods and criteria

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

Recommended reading

Basic literature	R. Zienkiewicz Telefony komórkowe GSM i DCS WKŁ Warszawa
Supplementary literature	No requirements

	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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