GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Algorithms and Data Structures, PG_00058919		
Field of study	Informatics		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Part-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	8.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Algorithms and Systems Modelling -> Faculty of Electronics Telecommunications and Informatics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Marcin Jurkiewicz	
	Teachers	dr Marcin Jurkiewicz	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	15.0	0.0	45

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	45	8.0	147.0	200

Subject objectives

The aim of the course is to teach students skills and present necessary tools to evaluate the effectiveness of a existing code, and to efficiently solve simple algorithmic problems.

Learning outcomes

Course outcome	Subject outcome	Method of verification

Subject contents

Introduction to computational complexity analysis and the NP-completeness theory. Basic and advanced data structures (dictionaries, hashed arrays, trees, etc.) Sorting algorithms. Exact and greedy algorithms. Heuristics and approximate methods. Graph algorithms. Dynamic programming. Real complex networks.

Prerequisites and co-requisites

basic knowledge of C language

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Project	50.0%	50.0%
Lecture	50.0%	50.0%

Recommended reading

Basic literature	T.Cormen i in. "Introduction to data structures M.Kubale "Optymalizacja Dyskretna"
Supplementary literature	L.Banachowski i in. Algorytmy i struktury danych N.Wirth Algorithms + data structures = computer programs L.Banachowski i in. Analiza algorytmów i struktur danych M.Sysło i in. Algorytmy optymalizacji dyskretnej Krzysztof Goczyła Struktury danych
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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