

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Basics of computer programming, PG_00045290								
Field of study	Data Engineering								
Date of commencement of studies	October 2023		Academic year of realisation of subject			2023/2024			
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	1		Language of instruction			English			
Semester of study	1		ECTS credits			5.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Department of Algorithms and Systems Modelling -> Faculty of Electronics, Telecommunications and Informatics						ns and		
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Dariusz Dereniowski						
	Teachers		dr inż. Tytus Pikies						
			prof. dr hab. inż. Dariusz Dereniowski						
			dr hab. inż. Robert Janczewski						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM	
	Number of study hours	30.0	0.0	15.0	20.0		0.0	65	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includi plan	n didactic Participation in ed in study consultation hours		Self-study S		SUM		
	Number of study hours	65		10.0		50.0		125	
Subject objectives	The aim of the course is an introduction to computer programming, whose main goal is to teach student solving programming tasks and writing programs in C/C++.								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	[K6_U01] programs in procedural, object, functional and logic programming languages, codes programs at the processor instruction level, runs and tests programs.		Student is able to code in procedural programming language, runs and tests programs.			[SU1] Assessment of task fulfilment			
	[K6_W05] Knows and understands programming models and evolution of related languages. Knows the methods of analysing and designing information systems and the modeling languages used in them, as well as the basic object- oriented programming platforms.		Student knows and understands selected programming models and corresponding programming languages. Student learns one of the object oriented programming platforms.			[SW1] Assessment of factual knowledge			

Subject contents	LECTURES Introduction. Programming languages, alphabet, syntax and semantics. Translation. Classification of data types. Integer and floating point types. Arithmetic expressions and operators. Standard mathematical functions. Character type. Casting. Logical type. Logical operators and expressions. Basics of input/output processing. Conditional statements (if, switch) and conditional expression. Iteration statements (for, while, do-while). Nested iterations. Defining types. Enumerated type. Constants. One- and multi- dimensional arrays. Null-terminated strings. Scope and lifetime of variables. Functions. Side effect. Passing parameters to functions. Pointer type. Pointer arithmetic. Pointers for inter-function communication. Dynamic memory allocation. Basic dynamic data structures. Records (structures). Data structures using records and their applications. Applications of dynamic data structures (stacks, queues). Input/output formatting. File processing. Applications of recurrence (e.g. divide and conquer, greediness, dynamic programming). LABORATORIES Solving simple programming tasks according on knowledge provided in lectures and based on provided manual.						
Prerequisites and co-requisites	No requirements						
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	project	50.0%	30.0%				
	written test	50.0%	40.0%				
	laboratories	50.0%	30.0%				
Recommended reading	Basic literature	 Programming – lecture slides, 2013 (available on course website). Materials for laboratories (2013) (available on course website). Grebosz Jerzy, Symfonia C++ Standard (vol. 1 and 2), Edition 2000, 					
		Cracow 2008.					
	Supplementary literature	-					
	eResources addresses	Adresy na platformie eNauczanie: Podstawy Programowania 2023/24 (Informatyka & Inżynieria Danych) - Moodle ID: 30795 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30795					
Example issues/ example questions/ tasks being completed	Writing a program that fulfills a given specification.						
	Analysis of a behavior of a given co	alysis of a behavior of a given code.					
Work placement	Not applicable						

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