GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Information Technologies, PG_00003105						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2024/2025		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Robert Smyk				
	Teachers						

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	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	30	4.0	16.0	50

Subject objectives	Understanding the basic components and principles of computer operation.Ability to read the algorithm, the ability to model the algorithm (flowcharts and others).Fundamentals of number systems.Basics of programming in the selected language (C or Python).Practical introduction to the use of the e-Learning system.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U04] has the ability to self-educate, among other things, in order to improve professional qualifications	Completes IT tasks independently during the semester.	[SU1] Assessment of task fulfilment
	[K6_W06] knows the structure of computers and microprocessors and the tasks of operating systems, has basic knowledge of the basics of computer software, drivers, microprocessor technology, design of simple algorithms and the operation of information networks	Knows the basic components of computer architecture.	[SW1] Assessment of factual knowledge

Subject contents	Introduction to issues related to information technology. Remote learning (e-learning). Building a computer system. Ways of processing information on a computer. number representations. Floating point representation. Ways of writing algorithms: verbal description, block diagram, code. Programming in the selected language. Source code interpretation. Input and output during data processing. Data and Code. Different data structures, Conditional code execution. Code execution in a loop. The concept of program correctness verification. Basic code analysis. The concept of debugging. The concept of an algorithm. Analysis of the implementation of algorithms in the form of a code.
Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Homework	50.0%	25.0%
	Quises	50.0%	25.0%
	Kolowkium	50.0%	50.0%

Recommended reading	Basic literature	1. Linda Null, Julia Lobur, Struktura organizacyjna i architektura systemów komputerowych, Helion 2. Chris Minnick, Eva Holland, Podstawy programowania dla młodych bystrzaków, Septem 3. Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman, Algorytmy i struktury danych, Helion
	Supplementary literature	1. SEVOCAB: Software Systems Engineering Vocabulary. Term: *Flow chart*. Retrieved 31 July 2008. 2. Frank Bunker Gilbreth, Lillian Moller Gilbreth (1921) *Process Charts*. American Society of Mechanical Engineers.
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	What are the differences between von Neuman and Harvard architecture? What's the difference between RISC and CISC processor? Show a flowchart of a selection sort algorithm. List at least three methods of algorithm description and provide their basic properties. Based on the provided block diagram, write a program that will perform the given procedure.
Work placement	Not applicable