GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Programming Techniques, PG_00047554		
Field of study	Automatic Control, Cybernetics and Robotics		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2020/2021
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Decision Systems and Robotics -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krystyna Rudzińska-Kormańska	
	Teachers	dr hab. inż. Piotr Borowiecki dr inż. Tomasz Merta dr inż. Krystyna Rudzińska-Kormańska dr inż. Marek Tatara dr inż. Jakub Wszołek mgr inż. Marek Grzegorek mgr inż. Jan Glinko	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	30.0	0.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						

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	2.0	18.0	50

Subject objectives	Learning the art of programming in C + + using dynamic structures, object-oriented programming and graphical environment for use in automation and robotics.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	Student justifies implementation of specific data structures to solve given programming tasks. Student points and discusses fragments of code responsible for a specific functionality.	[SW2] Assessment of knowledge contained in presentation
	[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	Student uses templates and dynamic data structures to solve given tasks.	[SU1] Assessment of task fulfilment

Subject contents	Project 1. Programming techniques in C++ using dynamic structures for applications in automation. a) Introduction and discussion of projects; b) Implementation of projects and consultations; c) Receive projects. Project 2. Object-oriented programming techniques using STL library for applications in automation. a) Introduction and discussion of projects; b) Implementation of projects and consultations; c) Receive projects. Project 3. Programming in a graphical environment - signal processing in robotics and automation. a) Introduction and discussion of projects; b) Implementation of projects and consultations; c) Receive projects. Project 4. Programming in a graphical environment - simulation and animation of automation and robotics. a) Introduction and discussion of projects; b) Implementation of projects and consultations; c) Receive projects.
Prerequisites and co-requisites	Positive evaluation of the course of Programming Methods

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Four projects	50.0%	100.0%
Recommended reading	Basic literature	Bruce Eckel "Thinking in C++", 2nd ed., 2006	
	Supplementary literature	Bruce Eckel "Thinking in C++", 2nd ed., 2006	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		