



## Subject card

Subject name and code	Language C/C++, PG_00053211						
Field of study	Chemistry						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Optional 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	2	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Electrochemistry, Corrosion and Materials Engineering -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Artur Zieliński					
	Teachers	dr hab. inż. Artur Zieliński dr inż. Łukasz Gawel					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	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	5.0		40.0		75
Subject objectives	Getting acquainted with several modern programming languages.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U08] is capable to design and carry out the experiment which is necessary to confirm a given hypothesis and sees wider context, often beyond-technical, of the analysed phenomena	The student is able to use the programming language to implement the algorithm necessary to perform a specific task.			[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
	[K6_W05] knows and understands the chemical processes and algorithms of mathematical models which are necessary for the design of technological processes, knows chemical structure of contemporary materials and its relation to their properties, enabling the selection of the materials for sustainable development technology and material-efficient and energy-efficient methods	The student is able to make an algorithmization of the technological process.			[SW1] Assessment of factual knowledge		
	[K6_K01] understands the need for lifelong learning, can inspire and organize the process of teaching other people	The student is able to translate the knowledge of the implementation of computer algorithms into the way of carrying out a task in a professional career.			[SK3] Assessment of ability to organize work		
Subject contents	1. Introduction, history of language.2. Functions and operators.3. Controlling the execution of the program.4. Pointers and arrays.5. Multidimensional arrays.6. Structures and unions.7. Programming of microcontrollers.						
Prerequisites and co-requisites	General knowledge of computer science.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Lecture	50.0%	50.0%
	Laboratory	50.0%	50.0%
Recommended reading	Basic literature	B. W. Kernighan, D. M. Ritchie, Język C, programowanie, Helion, Gliwice, 2010.	
	Supplementary literature	The Internet	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>What are the disadvantages of compiled languages versus interpreted languages? How can I draw 16 real numbers with a C program? How can you implement a vector in C language? Describe the role and meaning of the main () function in a C program.</p>		
Work placement	Not applicable		