University of Gdańsk

Subject card

Subject name and code	Introduction to Computer Programming, PG_00198454		
Field of study	Informatics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's 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	1	ECTS credits	6.0
Learning profile	academic	Assessment form	exam
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Janusz Dybizbański	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	60.0	0.0	0.0	90

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	90	0.0	60.0	150

Subject objectives

The aim of the course is to learn basic programming techniques and acquire the skills to design, analyze and implement basic algorithms.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[INFOL3_U06] is able to select and apply appropriate IT methods and tools to solve complex problems, is able to use acquired knowledge by appropriately selecting sources and information derived from them, and perform evaluation, critical analysis, and synthesis of this information	can evaluate program correctness, including partial and total correctness, and analyze control structures and nested loops can select basic data structures and programming mechanisms (macros, functions, recursion) for problem solving can analyze program processing stages in high-level languages (compilation, linking, execution) can analyze numerical data representation and computational errors (overflow, rounding errors)	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[INFOL3_W05] knows and understands advanced concepts in the field of various programming paradigms and programming languages; as well as object-oriented design and programming methods and patterns	can create computer programs and knows basic algorithm design techniques knows the recursion mechanism, basic algorithms, and data structures	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report

<table>
<tr><td>Subject contents</td><td>• Algorithm and program. Simple programs in various ways of writing (verbal description, block diagram, programming language instructions). Manual simulation of the algorithm.
• Scheme of program processing in a high-level language - stages of compilation, consolidation and execution.
• Variable declarations. Simple data types and structural types: array, record. Scope of declaration and visibility of variables, global variables.
• Control instructions. The concept of partial and total program correctness.
• Nested loops.
• Procedures and functions. Ways to pass parameters to functions.
• Recursion mechanism and its use. Expressing a loop with recursion and an example of expressing recursion with a loop. Proving the correctness of recursive functions using mathematical induction.
• Representation of integers and floating-point numbers in the computer and the errors caused by them (over-range and rounding errors).
• The use of pointers and memory management on the example of simple data structures.
• Information about theoretical computational limits.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>no requirements</td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>exam</td><td>51.0%</td><td>50.0%</td></tr>
<tr><td>test</td><td>51.0%</td><td>20.0%</td></tr>
<tr><td>projects in class</td><td>51.0%</td><td>15.0%</td></tr>
<tr><td>project</td><td>51.0%</td><td>15.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>[1] Griffiths David, Griffiths Dawn. C. Rusz głową! Wydawnictwo Helion, Gliwice, 2013.

[2] Szepietowski A. Podstawy informatyki. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2000.

[3] Kernighan B.W., Ritchie D.M. Język ANSI C. Programowanie. Wydanie II, Wydawnictwo Helion, Gliwice 2010.</td></tr>
<tr><td>Supplementary literature</td><td>no applicable</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>no applicable</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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