University of Gdańsk

Subject card

Subject name and code	Introduction to Programming, PG_00193512		
Field of study	Bioinformatics		
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	7.0
Learning profile	academic	Assessment form	credit
Conducting unit	Institute of Informatics -> Faculty of Mathematics, Physics and Informatics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Jakub Neumann	
	Teachers	prof. dr hab. Marcin Wieśniak, prof. UG dr Jakub Neumann	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	45.0	0.0	0.0	60

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	60	0.0	115.0	175

Subject objectives

The aim of the course is to familiarize students with basic programming structures and techniques (data types, conditional statements, loops, functions), data structures (lists, dictionaries) and to acquire the skills to design, analyze and implement simple algorithms.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOINL3_W01] Has knowledge of computer science technologies, with particular emphasis on programming	During classes, learns: basic programming structures (conditional statements, loops), basic data types (numeric, Boolean, character strings), scope of declarations and visibility of variables (local and global variables), learns the principles of building correct functions (how to determine parameters and return values), learns about data structures and operations on them (lists, dictionaries)	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[BIOINL3_U01] Graduate is able to program using modern programming tools, including tools dedicated to bioinformatics	Is able to create, run and test programs in a dedicated tool such as an integrated development environment or a specialized editor, is able to install and configure his or her work environment	[SU1] oral statement/conversation/ discussion [SU5] implementation of a problem task [SU6] demonstration of practical skills
[BIOINL3_K01] Is aware of the limitations of his own knowledge and skills; he demonstrates a willingness to constantly improve, update his knowledge and enhance his qualifications in bioinformatics	Is ready to use technical documentation, professional literature and expert sources	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report

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<tr><td>Subject contents</td><td>

- Programs in various ways of writing (verbal description, programming language instructions). Manual simulation of the algorithm.
- Development environment, running and debugging programs
- Variables and basic data types. Variable declaration scope and visibility, local and global variables
- Basic control programming constructs: conditional statements, loops (including nested)
- Functions, parameters, return value, pure functions
- Basic data structures: lists, dictionaries
- Error handling

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<tr><td>Prerequisites and co-requisites</td><td></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>tests</td><td>51.0%</td><td>20.0%</td></tr>
<tr><td>tests</td><td>51.0%</td><td>60.0%</td></tr>
<tr><td>project</td><td>51.0%</td><td>20.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Python. Wprowadzenie. Wydanie V, aut. Mark Lutz, ISBN: 9788328391697</td></tr>
<tr><td>Supplementary literature</td><td>Python. Nowoczesne programowanie w prostych, aut. Bill Lubanovic, ISBN: 9788328368422</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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