University of Gdańsk

Subject card

Subject name and code	Programming - laboratory , PG_00206152		
Field of study	Oceanography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Laboratory of Physical Oceanography -> Department of Physical Oceanography and Climate Research -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Marek Kowalewski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	30.0	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	2.0	18.0	50

Subject objectives

The course is intended to provide knowledge necessary to understand, design and write computer programs. in Python.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANL3-K01] is willing to plan and implement, individually or as a team, the subsequent stages of the entrusted task, is willing to take responsibility for the results of these works, effectively cooperates in the team and performs various roles in it	He/she is ready to be responsible for his/her own work and to conform to the rules of teamwork and responsibility for jointly performed tasks in practical exercises.	[SK5] implementation of a problem task
[OCEANL3-U05] is able to use general-purpose and specialized software, as well as mathematical and statistical methods, in data analysis and the presentation of results	He/she is able to use application and specialized software, as well as design and write computer programs independently.	[SU4] test/exam - oral or written [SU5] implementation of a problem task
[OCEANL3-W05] has an advanced knowledge of techniques, research methods, and tools (mathematical, statistical, and computational) used by oceanographers to describe and interpret processes and phenomena occurring in the marine environment	He/she has basic knowledge of programming techniques and advanced knowledge of computer tools used in the work of an oceanographer necessary to describe and interpret phenomena and processes in the marine environment.	[SW4] test/exam - oral or written
[OCEANL3-U11] is able to work individually and collaborate in a team, assuming various roles and performing different tasks	He/she will be able to work individually and cooperate in groups to perform tasks as part of a group project.	[SU5] implementation of a problem task

<table>
<tr><td>Subject contents</td><td>Laboratory exercises will consist of the student's independent creation of programs that will illustrate the successively introduced constructs of the programming language. The Jupyter Notebook environment will be used to write and run the programs.The course will introduce the basic elements of programming: variables and constants, basic data types, data collections (tuples, sets, dictionaries, lists), instructions (assignments, loops, conditional and others), files and input/output operations, exception handling, defining functions and modules, structured programming and elements of object-oriented programming, basic function libraries (NumPy, Matplotlib).Translated with DeepL.com (free version)</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Ability to work in Windows and use basic software (MSOffice)</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>Test</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Dr Charles R. Severance,2023, Python for Everybody. Exploring Data in Python 3, http://do1.dr-chuck.com/pythonlearn/EN_us/pythonlearn.pdf</td></tr>
<tr><td>Supplementary literature</td><td>Alberto Boschetti, Luca Massaron, 2018, Python Data Science Essentials, 3rd Edition, Packt Publishing</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Write a function that checks whether the natural number given in the argument is a prime number.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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