University of Gdańsk

Subject card

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|---|---|---|---|
| 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<br>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-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 |
| [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-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<br>[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>
</table>
</td></tr>
<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>
</td></tr>
<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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