GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Programming Elements, PG_00044762		
Field of study	Engineering Management		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2021/2022
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research 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	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Informatics in Management -> Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Grażyna Musiatowicz-Podbiał	
	Teachers	mgr Jaromir Durkiewicz dr Grażyna Musiatowicz-Podbiał	

Lesson types and methods of instruction

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

Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=10135
Adresy na platformie eNauczanie:

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	6.0	39.0	75

Subject objectives

The course introduces participants to the subject of writing computer programs. Particular emphasis is placed on gaining practical skills.

As part of the course, students work in a computer lab and at home (online). Independent work with a computer is interwoven with lectures introducing new issues and quizzes systematizing knowledge.
Classes are taught in Python. Thanks to its simple structure and a large number of libraries Python has a very wide application in scientific applications.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U09] obtains data for analysis and interpretation of results using information technology	The student can write a simple program, choose the appropriate data structures.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
[K6_W05] knows the statistical and IT methods and tools that enable the acquisition and presentation of data on the organisation's resources, including technical resources	The student have to choose technology relevant to given situation.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents	1. Computational thinking methods - basic concepts 2. Algorithmics and software life cycle 3. Programming elements: 4. Arithmetic operators 5. Using variables 6. Use of data 7. Logic 8. Iteration 9. Procedures and functions 10. Recursive functions 11. Events 12. Liists, tuples, tables and dictionaries 13. File Handling 14. Object-oriented programming 15. Testing, debugging and production version
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Work during laboratories and knowledge tests	60.0%	100.0%

Recommended reading	Basic literature	1. A.Hodorowicz, ECDL S10. Podstawy programowania w języku Python, WN PWN, Warszawa 2019. 2. M.Sysło, Algorytmy, Helion, Gliwice 2016. 3. A. Zed A. Shaw, Python. Proste wprowadzenie do fascynującego świata programowania, 2018. 4. P.Wróblewski, Algorytmy, struktury danych i techniki programowania, wyd. Helion, Gliwice 1997. 5. M.Kubale, Łagodne wprowadzenie do analizy algorytmów, wyd. PG, Gdańsk 2021.
	Supplementary literature	1. M.Lutz, Python. Wprowadzenie, wyd IV, Helion, Gliwice 2010. 2. M.Lutz, Python. Leksykon kieszonkowy, wyd V, Helion, Gliwice 2014. 3. Zed A. Shaw**,** Learn Python 3 the Hard Way: A Very Simple Introduction to the Terrifyingly Beautiful World of Computers and Code
	eResources addresses	Podstawowe https://docs.python.org/3/ - Python 3 official documentation.
Example issues/ example questions/ tasks being completed	What are key elements of computational thinking? Write a program that displays 10 stars on the screen. Use the loop instruction. Write a program that will calculate how many primes are in the range	
Work placement	Not applicable	