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 2022		Academic year of realisation of subject		2022/2023		
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		mgr Jaromir Durkiewicz				
	Teachers		mgr Jaromir Durkiewicz				

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						

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 their home. Independent work with a computer is interwoven with theoretical parts. Classes are taught in Python. Thanks to its design, structure and large number of available libraries Python is widely applied in scientific and business domains.

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	• Elementary programming knowledge: Working environment, input and output, names and values, datatypes, operators, strings, conditionals, iteration, functions, files, etc. • Algorithms and programming - theory • Bulit-in datatypes • Mathematics, statistics, logic • Object-oriented programming • Functional programming • Graphical User Interface

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	2 tests and 1 oral answer	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	Adresy na platformie eNauczanie: Elementy programowania, ZiE, 2023 - STAC - Moodle ID: 28637 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28637

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