GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Programming Elements, PG_00044761
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	Part-time studies (on-line)	Mode of delivery	blended-learning
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	16.0	0.0	0.0	16
	E-learning hours included: 12.0						
	Additional information: 2 meetings at the university 6 meetings online						

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	16	6.0	53.0	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). Teacher systematically introduces new concepts which are then elaborated and realized through exercises. Classes are taught in Python. Thanks to its simple structure and a large number of libraries Python has a very wide application in scientific and business 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 [SU3] Assessment of ability to use knowledge gained from the subject [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 can choose technology relevant to given situation.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents	Fundamental programming concepts, applied in Pytjon: • input and output, • names, variables, values, • datatypes and structures, • conditional instructions, • iteration, • functions, • recursion, • basics of object-oriented programming, • theoretical foundations of algorithms, etc.		
Prerequisites and co-requisites			

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final test	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. 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 - NSTAC - Moodle ID: 28642 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28642

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