



## 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	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	16.0	0.0	0.0	16
	E-learning hours included: 0.0						
Elementy programowania, ZiE, 2023 - NSTAC - Moodle ID: 28642 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28642">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28642</a>							
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	<p>The course is intended to introduce students to the domain of computer programming. Emphasis is put on the practical skills.</p> <p>The students work in the laboratory and at home. Teacher systematically introduces new concepts, to be applied and grounded via practical exercises.</p> <p>The course is taught in Python language, which - thanks to its clear structure and rich ecosystem - is widely used in science and business.</p>						
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.	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment				
	[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 realized in Python: <ul style="list-style-type: none"> <li>• user input &amp; output,</li> <li>• names, variables, values,</li> <li>• datatypes and structures,</li> <li>• conditionals,</li> <li>• iteration,</li> <li>• functions,</li> <li>• recursion,</li> <li>• introduction to object-oriented programming,</li> <li>• algorithms, etc.</li> </ul>		
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	<ol style="list-style-type: none"> <li>1. A.Hodorowicz, ECDL S10. Podstawy programowania w języku Python, WN PWN, Warszawa 2019.</li> <li>2. M.Sysło, Algorytmy, Helion, Gliwice 2016.</li> <li>3. Zed A. Shaw, Python. Proste wprowadzenie do fascynującego świata programowania, 2018.</li> <li>4. P.Wróblewski, Algorytmy, struktury danych i techniki programowania, wyd. Helion, Gliwice 1997.</li> <li>5. M.Kubale, Łagodne wprowadzenie do analizy algorytmów, wyd. PG, Gdańsk 2021.</li> </ol>	
	Supplementary literature	<ol style="list-style-type: none"> <li>1. M.Lutz, Python. Wprowadzenie, wyd IV, Helion, Gliwice 2010.</li> <li>2. M.Lutz, Python. Leksykon kieszonkowy, wyd V, Helion, Gliwice 2014.</li> <li>3. Zed A. Shaw, Learn Python 3 the Hard Way: A Very Simple Introduction to the Terrifyingly Beautiful World of Computers and Code</li> </ol>	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>What are key elements of computational thinking?</p> <p>Write a program that displays 10 stars on the screen. Use the loop instruction.</p> <p>Write a program that will calculate how many primes are in the range</p>		
Work placement	Not applicable		