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 2020	Academic year of realisation of subject	2020/2021
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	e-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	Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tomasz Deręgowski	
	Teachers	dr inż. Tomasz Deręgowski	

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: 16.0

Elementy programowania - Moodle ID: 14178
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=14178

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). Independent work with a computer is interwoven with lectures introducing new issues and quizzes systematizing knowledge.
Classes are taught in Python using the Jupyter notebook. 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_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
[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

Subject contents

01. Python Data Types

- 01.00 Course introduction & overview
- 01.01 Variables and numbers, Ex. 1-5
- 01.02 Strings, Ex. 1-5
- 01.03 Lists, Ex. 1-8
- 01.04 Dictionaries, Ex. 1-9
- 01.05 Tuplets, Ex. 1
- 01.06 Sets and Booleans
- 01.07 Comparison Operators
- 01.08 EXCERCISE - Objects and Data Structures

02. Statements and operators

- 02.01 Indentations and if statements, Ex. 1-9
- 02.02 for and while loops, Ex. 1-13
- 02.03 Operators and List Comprehensions, Ex. 1-9
- 02.04 EXCERCISE-Statements and Operators, Ex. 1-7

03. Methods and functions

- 03.01-Methods, functions and variables scope, Ex. 11
- 03.02-Map, Filter and Lambda Expressions
- 03.03 EXCERCISE - Function, , Ex. L1, L2, L3

04. FIles, exceptions and user input

- 04.01 Files, Ex. 1-7
- 04.02 Exceptions, Ex. 1-4
- 04.03 User input, Ex. 1-3

05. Object Oriented Programming

- 05.01-OOP Basics
- 05.02-Inheritance
- 05.03-EXCERCISE - OOP Basics

06. Testing your code

- 06.01 Testing
- 06.02 Unit Testing

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Working in class	0.0%	50.0%
Working online	0.0%	50.0%

Recommended reading

Basic literature	Technical documentation https://docs.python.org/3/
Supplementary literature	Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming - Eric Matthes
eResources addresses	

Example issues/ example questions/ tasks being completed

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