

Subject card

Subject name and code	Programming Basics, PG_00188816						
Field of study	Podstawy programowania						
Date of commencement of studies	October 2026		Academic year of realisation of subject			2026/2027	
Education level	Bachelor's studies		Subject group			Obligatory subject group 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			4.0	
Learning profile	academic		Assessment form			credit	
Conducting unit	Institute of Mathematics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Iwona Krzyżanowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	60.0	0.0	0.0	60
	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	60		2.0		38.0	100
Subject objectives	Students acquire the ability to algorithmize simple problems and implement them in a high-level, general-purpose programming language, e.g. Python, based on the basic elements of this language. Developing the ability to control and verify one's own and other people's reasoning and source code. Preparation for in-depth intellectual, literary and technical exploration of IT problems for which simple tools are not sufficient.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[MATL3_U16] is able to work in a team, plan and organize such work	The student is able to work in a team and, within a group, can plan, divide, and carry out the work on a programming project.	[SU5] realizacja zadania problemowego [SU8] obserwacja samodzielnej lub zespołowej pracy studenta
	[MATL3_U12] is able to create and analyze an algorithm consistent with the specification and write it in a selected programming language, as well as compile, run and test a computer program written by himself/herself	The student is able to formulate an algorithm for a problem, justify its correctness, and implement this algorithm in a learned programming language, selecting appropriate data types and control structures. The student can design the structure of a program by extracting subprograms (functions). The student can compile, run, and test a computer program written independently in a high-level language, such as Python.	[SU5] realizacja zadania problemowego
	[MATL3_W12] knows and understands the principles of occupational health and safety	The student knows and understands the principles of health and safety in the computer lab.	[SW1] wypowiedź ustna/rozmowa/ dyskusja
	[MATL3_W10] knows and understands the basics of computational techniques and programming that support the work of a mathematician and understands their limitations	The student has knowledge of and understands the basics of programming that support a mathematician's work, as well as their limitations.	[SW5] realizacja zadania problemowego
	[MATL3_U11] is able to recognize problems, including practical issues, that can be solved algorithmically; is able to make specification for such a problem	The student can create an algorithm for a new problem, justify its correctness, and implement it in a learned programming language.	[SU5] realizacja zadania problemowego
Subject contents	• The principles of health and safety in the computer lab • Preparing the environment. • Basic types of variables (lists, dictionaries, tuples, sets). • Creating simple scripts. • Conditional if statement. • For, while loops. • Pseudo-random numbers. • Working with the file, writing, reading and modifying. • Testing and error handling. • Writing your own functions. • GUI graphical user interface, e.g. tkinter module, graphics.py. • Introduction to the Class.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Observation of student's attitude	51.0%	0.0%
	tests and/or project	51.0%	100.0%
Recommended reading	Basic literature	A. Literature required to finally pass the course (pass the exam): A.1. used during classes • https://docs.python.org/3/ A.2. studied independently by the student • https://docs.python.org/3/ • Lutz M., Python. Wprowadzenie.	
	Supplementary literature	• https://www.w3schools.com/python • Heinold B., A Practical Introduction to Python Programming • McKinney W., Python w analizie danych. Przetwarzanie danych za pomocą pakietów Pandas i NumPy oraz środowiska IPython	
	eResources addresses		
Example issues/ example questions/ tasks being completed	no aplicable		
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.