

Subject card

Subject name and code	Programming in Python, PG_00179334						
Field of study	Informatics						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group 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	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		6.0		
Learning profile	academic		Assessment form		exam		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		mgr Laura Grzonka				
	Teachers		mgr Laura Grzonka				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	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		0.0		0.0	60
Subject objectives	Teaching students the Python language applications: creating and implementing machine learning algorithms.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[INFL3_U03] can design and analyze algorithms for their correctness and computational complexity using appropriate algorithmic techniques and data structures	The student: Describes basic algorithms used in machine learning and identifies their capabilities and limitations. Implements machine learning algorithms in Python using appropriate libraries, and analyzes their correctness and performance. Draws conclusions regarding further development of the algorithms. Demonstrates responsibility for the reliability of computational analysis results and ensures the algorithmic correctness of developed solutions.	[SU2] presentation/project/paper/report [SU4] test/exam - oral or written
	[INFL3_U06] is able to design, create, run and test programs using dedicated tools and adequate templates	The student: Explains and characterizes selected machine learning algorithms. Selects appropriate machine learning algorithms depending on the problem being analyzed. Creates ML algorithms and adjusts internal parameters. Works independently and as part of a team on programming projects using Python, adheres to established collaboration and code documentation standards.	[SU2] presentation/project/paper/report [SU4] test/exam - oral or written
	[INFL3_W05] has general knowledge of various programming paradigms and programming languages; has detailed knowledge of object-oriented design and programming methods and patterns	The student: Characterizes object-oriented programming concepts based on developed applications. Organizes application code in a clear and structured manner. Demonstrates creativity in selecting an appropriate programming paradigm depending on the nature of the problem being solved.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report
Subject contents	The classes will discuss machine learning algorithms and their implementation in Python.		
Prerequisites and co-requisites	- Knowledge of basic programming constructions available in Python - Knowledge of rules of the OOP		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		51.0%	70.0%
		51.0%	30.0%
Recommended reading	Basic literature - Python language documentation available at https://docs.python.org/ - Documentation for training Python 101: https://python101.readthedocs.io/pl/latest/index.html The field of machine learning develops rapidly. In order to stay up to date, it is recommended to follow specialized blogs and portals as well as scientific literature. The teacher will provide current information in this respect at the beginning and/or during the classes. Examples of valuable pages that are worth visiting include: - Machine Learning Mastery: https://machinelearningmastery.com - Medium: https://medium.com/tag/machine-learning - Geeks For Geeks: https://www.geeksforgeeks.org/ - Kaggle: https://www.kaggle.com/		

	Supplementary literature	A very good manual introducing the topic of machine learning: Brunton, S. L., & Kutz, J. N. (2021). <i>Data-Driven Science and Engineering</i>. https://doi.org/10.1017/9781009089517
	eResources addresses	Basic https://www.kaggle.com/ - Website Kaggle. Access: 14.07.2025 https://www.geeksforgeeks.org/ - Website Geeks For Geeks. Access: 14.07.2025 https://medium.com/tag/machine-learning - Machine Learning topic on Medium platform. Access: 14.07.2025 https://machinelearningmastery.com - Website Machine Learning Mastery. Access: 14.07.2025 https://python101.readthedocs.io/pl/latest/index.html - Documentation for training Python 101. Access: 14.07.2025 https://docs.python.org/ - Python language documentation. Access: 14.07.2025 Supplementary https://doi.org/10.1017/9781009089517 - Book "Data-Driven Science and Engineering" on the website of the Cambridge University Press. Access: 14.07.2025
Example issues/ example questions/ tasks being completed	The grade of the laboratory part of the course will be given based on projects. The grade of the lecture part of the course will be given based on an exam.	
Work placement	Not applicable	

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