



## Subject card

Subject name and code	Script Languages and their Applications, PG_00063908						
Field of study	Informatics						
Date of commencement of studies	February 2025	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group			Optional subject group Specialty 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	1	Language of instruction			Polish		
Semester of study	1	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Algorithms and Systems Modelling -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Robert Janczewski					
	Teachers	dr hab. inż. Robert Janczewski					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	30.0	0.0	45
	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	45		6.0		24.0	75
Subject objectives	Students learned two script languages: Python and Cython. They know the syntax of the languages and basic libraries of Cython and Python. They wrote several small and one medium-size program in Python.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W03] knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum	Student learns libraries written in Python.	[SW1] Assessment of factual knowledge
	[K7_W04] knows and understands, to an increased extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or other elements or programmable devices specific to the field of study, and organization of work of systems using computers or such devices	Student learns how to design programs written in Python.	[SW1] Assessment of factual knowledge
	[K7_W10] knows and understands, to an increased extent, the basic processes occurring in the life cycle of equipment, objects and technical systems, as well as methods of supporting processes and functions, specific to the field of study	Student becomes familiar with the lifecycle of programs in Python.	[SW1] Assessment of factual knowledge
	[K7_U12] is able, to an increased extent, to analyze the operation of components and systems related to the field of study, as well as to measure their parameters and study their technical characteristics, and to plan and carry out experiments related to the field of study, including computer simulations, interpret the obtained results and draw conclusions	The student becomes familiar with methods of analyzing programs in Python.	[SU1] Assessment of task fulfilment
Subject contents	<p>Course content – lecture</p> <ol style="list-style-type: none"> <li>1. Introduction to Python and Cython.</li> <li>2. Python: controlling execution of a program.</li> <li>3. Python: data types.</li> <li>4. Python: lists, tuples and dictionaries.</li> <li>5. Python: text processing.</li> <li>6. Python: modules and objects.</li> <li>7. Python: standard library.</li> <li>8. Python: GUI.</li> <li>9. Python: WWW applications.</li> <li>10. Python: machine learning.</li> </ol> <p>Course content – project</p> <ol style="list-style-type: none"> <li>1. Introduction to the Python and Cython languages.</li> <li>2. Python: control flow mechanisms in programs.</li> <li>3. Python: data types and structures.</li> <li>4. Python: operations on lists, tuples, and dictionaries.</li> <li>5. Python: text analysis and processing.</li> <li>6. Python: modules and object-oriented programming.</li> <li>7. Python: overview of the standard library.</li> <li>8. Python: user interfaces graphical and text-based.</li> <li>9. Python: development of web applications.</li> <li>10. Python: applications in machine learning.</li> </ol>		
Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical exercise	50.0%	50.0%
	colloquium	50.0%	50.0%
Recommended reading	Basic literature	<a href="http://www.python.org/doc/">http://www.python.org/doc/</a> , R.M. Lerner „Core Perl. Profesjonalny przewodnik po języku Perl.“, Helion 2003	

	Supplementary literature	No requirements
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Practical activities within the subject	Not applicable	

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