

Subject card

Subject name and code	Programming Languages, PG_00198511						
Field of study	Informatics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study		
Mode of study	part-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		5.0		
Learning profile	academic		Assessment form		exam		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Wiesław Pawłowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	20.0	0.0	0.0	40
	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	40		0.0		85.0	125
Subject objectives	The aim of this course is to familiarize students with the most important mechanisms offered by modern programming languages, including elements of functional and object-oriented programming, as well as the use of type systems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[INFOL3_W05] knows and understands advanced concepts in the field of various programming paradigms and programming languages; as well as object-oriented design and programming methods and patterns		Can solve programming problems using the learned programming paradigms. Is familiar with the key features of functional and object-oriented programming models.		[SW5] implementation of a problem task		
	[INFOL3_U02] is able to use his/her knowledge of higher mathematics to model and solve complex problems		Given a description of a problem, can formalize a solution by selecting elements from the learned programming paradigms and associated techniques.		[SU4] test/exam - oral or written [SU5] implementation of a problem task		
	[INFOL3_U06] is able to select and apply appropriate IT methods and tools to solve complex problems, is able to use acquired knowledge by appropriately selecting sources and information derived from them, and perform evaluation, critical analysis, and synthesis of this information		Can use the necessary tools—a code editor, a compiler, and tools that support the compilation process. Is able to analyze programming problems and is willing to consult technical documentation, specialized literature, and expert sources.		[SU4] test/exam - oral or written [SU5] implementation of a problem task		

Subject contents	The course covers programming paradigms and the most important concepts offered by modern programming languages. • Functional programming: functions (including functions as values), higher-order functions, tail recursion. • Use of type systems, type parameterization, polymorphic types. • Object-oriented programming concepts—objects, classes, and interfaces, inheritance and parameterization mechanisms. In addition to the language mechanisms listed above, the course will also cover tools that support the development, testing, and deployment of programs.		
Prerequisites and co-requisites	none		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	oral exam	51.0%	20.0%
	programming colloquia	51.0%	80.0%
Recommended reading	Basic literature	• Lecture materials (slides and code examples) • J. Resig, B. Bibeault, J. Maras, <i>Secrets of the JavaScript Ninja</i>, Second Edition, Manning, 2016. • M. Odersky, L. Spoon, B. Venners, F. Sommers, <i>Programming in Scala</i>, Fifth Edition, Artima Press, 2021.	
	Supplementary literature	• D. Wampler, <i>Programming Scala</i>, Third Edition. O'Reilly Media, 2021.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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