

Subject card

Subject name and code		Programming Languages I, PG_00204160						
Field of study		Informatics						
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 Subject group related to practical vocational preparation		
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		practical	Assessment form			credit		
Conducting unit		Institute of Informatics -> Faculty of Mathematics, Physics and Informatics -> Rector						
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	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		40.0		100
Subject objectives		The aim of the course is to familiarize students with the most important mechanisms offered by modern programming languages, including elements of functional, object-oriented and asynchronous programming.						
Learning outcomes		Course outcome		Subject outcome		Method of verification		
		[[INFPL3_U04] is able to use the acquired knowledge when creating, running and testing programs using dedicated tools and design patterns		is able to use basic tools - programming editor, compiler and simple build tool.		[SU5] implementation of a problem task		
		[[INFPL3_U08] is able to assess the usefulness of various paradigms and programming tools for solving various types of problems		knows how to solve programming problems with the help of learned programming paradigms		[SU4] test/exam - oral or written [SU5] implementation of a problem task		
		[[INFPL3_K02] is ready to recognize the importance of knowledge in solving cognitive problems and practical and seeking opinions experts in case of difficulties with independent problem solving		can analyze simple programming problems, is ready to use technical documentation, professional literature and expert sources		[SK4] test/exam - oral or written [SK5] implementation of a problem task		
		[[INFPL3_W04] knows and understands advanced issues in programming, algorithms and computational complexity, programming languages and paradigms, as well as the complex relationships between these areas		knows the basic features of the functional, object-oriented and asynchronous programming models		[SW4] test/exam - oral or written [SW5] implementation of a problem task		
		[[INFPL3_U09] is able to - in accordance with the given specification - design and implement IT system		knows how to match learned programming paradigms and mechanisms to problem specifications		[SU4] test/exam - oral or written [SU5] implementation of a problem task		

Subject contents	<p>The course covers programming paradigms and the most important concepts offered by modern programming languages.</p> <ul style="list-style-type: none"> • Functional programming: non-mutability, functions (including functions as values), tail recursion, polymorphism (type parameterization). • Collections as extended, parameterized data structures - the most important types and operations provided. • Basic concepts of object-oriented programming - objects, classes and interfaces/traits, inheritance mechanisms. • Elements of asynchronous programming <p>In addition to the above-mentioned language mechanisms, the course will also discuss/present basic tools to help create, test and run programs.</p>								
Prerequisites and co-requisites	none								
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="454 680 788 707">Subject passing criteria</th> <th data-bbox="798 680 1141 707">Passing threshold</th> <th data-bbox="1144 680 1482 707">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="454 712 788 741">programming colloquium</td> <td data-bbox="798 712 1141 741">51.0%</td> <td data-bbox="1144 712 1482 741">100.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	programming colloquium	51.0%	100.0%		
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programming colloquium	51.0%	100.0%							
Recommended reading	Basic literature	<ul style="list-style-type: none"> • Lecture notes (slides and code examples). • M. Odersky, L. Spoon, B. Venners, F. Sommers, Programming in Scala, Fifth Edition, Artima Press, 2021. • F. Lopez-Sancho, Akka in Action, Second Edition, Manning 2023. 							
	Supplementary literature	<ul style="list-style-type: none"> • D. Wampler, Programming Scala, Third Edition. O'Reilly Media, 2021. 							
	eResources addresses								
Example issues/ example questions/ tasks being completed									
Work placement	Not applicable								

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