

Subject card

Subject name and code	Design Patterns, PG_00179387						
Field of study	Informatics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
Mode of study	part-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		7.0		
Learning profile	academic		Assessment form		exam		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Tomasz Borzyszkowski				
	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		0.0	40
Subject objectives	The subject is intended to provide students with an overview of the most commonly used design patterns related to object-oriented programming.As part of the course, students will learn the practical use of selected design patterns to solve typical programming problems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[INFMU2_U03] designs, analyzes for correctness and computational complexity, and builds algorithms using advanced programming techniques and data structures		The student is able to solve programming problems using design patterns.		[SU2] presentation/project/paper/report		
	[INFMU2_W04] knows complex data structures and advanced methods of algorithmic solution of computationally difficult problems (exponential algorithms, approximation, heuristics)		The student knows the basic design patterns.		[SW2] presentation/project/paper/report		
Subject contents	The history behind design patterns Overview of structural design patterns Overview of structural design patterns An overview of behavioural design patterns Selected architectural patterns						
Prerequisites and co-requisites	Familiarity with the basics of object-oriented programming in the student's chosen languages.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project presentation, observation of student work	51.0%	100.0%
Recommended reading	Basic literature	Gamma E., Helm R., Johnson R., Vlissides J. Wzorce projektowe. Elementy oprogramowania obiektowego wielokrotnego użytku.Freeman E&E, Bates B., Sierra K. Rusz głową ! Wzorce projektowe.	
	Supplementary literature	Adrian Ostrowski, Piotr Gaczkowski, Architektura oprogramowania bez tajemnic. Wykorzystaj język C++ do tworzenia wydajnych aplikacji i systemów, Helion 2022.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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