



Subject card

Subject name and code	Advanced Object-Oriented Techniques, PG_00048008						
Field of study	Informatics						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2029/2030		
Education level	first-cycle studies	Subject group			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	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			2.0		
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 inż. Krzysztof Manuszewski					
	Teachers	dr inż. Krzysztof Manuszewski					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	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	30	2.0	18.0	50		
Subject objectives	The goal is to make student familiar with practical aspects of modern approaches like TDD/BDD/DDD and various tools/practices that support these approaches						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	Student is able to effectively apply tools and techniques for code refactoring			[SU4] Assessment of ability to use methods and tools		
	[K6_U09] can carry out a critical analysis of the functioning of existing technical solutions and assess these solutions, as well as apply experience related to the maintenance of technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment	Student is able to apply various technics typical for modern methodologies (i.e. UT, refactorisation) for purpose of improvement shape of implementation			[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
Subject contents	Course content – lecture <ul style="list-style-type: none"> • Technical Debt, refactoring and TDD/BDD • Elements of DDD, AoP • Construction of OO systems • Solid principles in practice • Importance of Design patterns • Classification of patterns 						
Prerequisites and co-requisites	Modern, high level object oriented languagess. Prefered C#.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	laboratories	50.0%	60.0%
	exam	50.0%	20.0%
	homework	50.0%	20.0%
Recommended reading	Basic literature	<p>Czysta architektura : struktura i design oprogramowania : przewodnik dla profesjonalistów, Robert C. Martin, Helion 2018</p> <p>Adaptywny kod zwinne programowanie, wzorce projektowe i SOLID-ne zasady, Gary McLean Hall, Helion 2018.</p> <p>R.Martin. Czysty kod, Helion 2014</p> <p>Wzorce projektowe, Eric Freeman, Elisabeth Freeman, Bert Bates, Kathy Sierra, Helion 2017</p>	
	Supplementary literature	<p>Pragmatyczny programista : od czeladnika do mistrza, Andrew Hunt, David Thomas, Helion 2017</p> <p>Oprogramowanie łatwe w utrzymaniu : pisz kod podatny na przyszłe zmiany, Joost Visser,</p> <p>Helion. 2017</p> <p>Wzorce projektowe, E. Gamma, R. Helm, R. Johnson, J.M. Vlissides., WNT 2005</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Practical activities within the subject	Not applicable		

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