

Subject card

Subject name and code	Microservice Architecture Patterns, PG_00183598						
Field of study	Informatics						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	practical		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Jakub Neumann				
	Teachers						
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		0.0		0.0	30
Subject objectives	The aim of the course is to familiarize students with the details of selected microservice architecture patterns in practical applications.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[INFL3_U04] can create, run and test programs using dedicated tools and design patterns		The student is able to design and create a fragment of an IT system using design patterns for microservices.		[SU2] presentation/project/paper/report		
	[INFL3_W03] has ordered knowledge in software engineering and project management methodologies, IT project life cycle, software specification, validation and verification, design patterns		The student has knowledge of selected microservice architecture patterns, knows the basic concepts related to domain modeling, and knows issues related to observability		[SW2] presentation/project/paper/report		
	[INFL3_K03] understands the need and appreciates the advantages of teamwork, understands the need for systematic work on team IT projects		The student, working in a group, divides tasks by creating the specification and implementation of a fragment using the concepts of domain modeling and selected microservice architecture patterns.		[SK2] presentation/project/paper/report		
Subject contents	Students will learn selected patterns and concepts from the area of microservice design patterns through practical examples and use cases. - Architectural pattern: Monolith vs. Microservice - Domain definition: Decomposition - Domain Driven Design (Event Sourcing, Aggregates, Entities, Saga) - Communication Styles: Synchronous vs. Asynchronous (Pub/Sub pattern) - Observability (logs, metics, traces) - Reliability (Circuit breaker) - External API (API Gateway, reverse proxy)						
Prerequisites and co-requisites	Passed the subject "Object-Functional Programming"						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Team project evaluation	51.0%	100.0%
Recommended reading	Basic literature	Microservices Patterns, Chris Richardson, ISBN 9781617294549	
	Supplementary literature	Domain-Driven Design. Zapanuj nad złożonym systemem informatycznym, Eric Evans, ISBN 9788328391840	
	eResources addresses	Basic https://microservices.io/ - A portal dedicated to microservice architecture issues	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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