



Subject card

Subject name and code	Internet services architectures, PG_00045384						
Field of study	Data Engineering, Data Engineering						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2028/2029		
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	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Computer Architecture -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Joanna Szłapczyńska					
	Teachers	dr hab. inż. Joanna Szłapczyńska					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	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	45	6.0		49.0		100
Subject objectives	The goal is to make students familiar with modern architectures of distributed systems as well as technologies implementing those architectures.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U07] uses information technologies to improve the acquisition, analysis and processing of data in business applications	uses information technology to design and implement cloud solutions			[SU1] Assessment of task fulfilment		
	[K6_K03] demonstrates the ability to think critically and analytically and integrates knowledge from many disciplines in order to make effective decisions	demonstrates critical and analytical thinking skills and integrates knowledge from multiple disciplines to develop cloud-based IT solutions			[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_W03] identifies veracious sources of information relevant to the analyzed issues	finds and is able to use reliable sources of information regarding the design and implementation of cloud solutions			[SW1] Assessment of factual knowledge		

Subject contents	Course content – lecture <ul style="list-style-type: none"> • Architecture of complex web applications. • Object-relational mapping mechanisms. • Architectural style using state change through representation. • Decomposition of an application into microservices. • Design and deployment of microservices. • Single-page web applications. • Containerization systems. • Cataloging and searching for services. • Load balancing of services. • Database structure migration. • Message exchange mechanisms. • Authentication and authorization mechanisms. 		
	Course content – laboratory <ol style="list-style-type: none"> 1. Collections 2. Threads 3. Java SE 4. Spring Framework & Spring Boot & Spring Data 5. Spring MVC 6. Microservices 7. Angular Framework 		
Prerequisites and co-requisites	Knowledge of languages such as Java, JavaScript, SQL as well as http protocol		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	50.0%	50.0%
	laboratory exercises	50.0%	50.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. AUI/ISA lecture materials at eNauczanie platform 2. Dokumentation of Spring Framework, 3. Dokumentation of RabbitMQ, 4. Dokumentation of Docker 	
	Supplementary literature	Microservices Patterns: With examples in Java, Chris Richardson, 2018, Manning Publications	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Practical activities within the subject	Not applicable		

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