GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Internet services architectures, PG_00045384		
Field of study	Data Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2027/2028
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 -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Joanna Szłapczyńska	
	Teachers	dr hab. inż. Joanna Szłapczyńska	

Lesson types and methods of instruction

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_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
[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_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

Subject contents

- 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.

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
laboratory exercises	50.0%	50.0%
exam	50.0%	50.0%

Recommended reading	Basic literature	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	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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