GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Large-scale enterprise applications, PG_00045322		
Field of study	Data Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
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	English
Semester of study	6	ECTS credits	5.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Radiocommunication Systems and Networks -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Cwalina	
	Teachers	dr inż. Krzysztof Cwalina	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	30.0	0.0	0.0	60

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	60	8.0	57.0	125

Subject objectives

Overview of design patterns, architectures, and tools used for design and development of large-scale enterprise applications with focus on the Java Enterprise Edition platform

Learning outcomes

Course outcome	Subject outcome	Method of verification

Subject contents

1. Overview of the Java SE platform, Java application structure and execution model. 2. Java application build process and related tooling. 3. Java collections and generic types. 4. Java Beans standard. 5. Enum types. 6. Thread handling in Java applications. 7. Sockets handling – TCP and UDP network programming. 8. Introduction to the Java EE platform. 9. Servlets, JSP and JSTL standards. 10. Component-programming of GUIs with JSF framework. 11. Processing of XML and JSON data formats. 12. Database access with JPA. 13. EJB container, stateful and stateless components. 14. Transactions in EJB layer, distributed transactions. 15. Authentication and authorization with JAAS framework. 16. Web services based on JAX-WS and JAX-RS specifications. 17. Microservices in Java EE platform.

Prerequisites and co-requisites

Completion of the course: object-oriented programming

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	1. E. Jendrock, I. Evans, D. Gollapudi, K. Haase, C. Srivathsa: „The Java EE 7 Tutorial", Oracle, 2014. 2. Java EE 7 API Specification: https://docs.oracle.com/javaee/7/api/toc.htm.
Supplementary literature	1. A. L. Rubinger, B. Burke: „Enterprise JavaBeans 3.1", O'Reilly Media, 2010.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	1. Database handling in large-scale enterprise application. 2. Implementation of business layer components. 3. Design and implementation of remote APIs for service-oriented enterprise applications. 4. Authentication and authorization in enterprise application.
Work placement	Not applicable

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