



## 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: <a href="https://docs.oracle.com/javaee/7/api/toc.htm">https://docs.oracle.com/javaee/7/api/toc.htm</a> .				
	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	<ol style="list-style-type: none"><li>1. Database handling in large-scale enterprise application.</li><li>2. Implementation of business layer components.</li><li>3. Design and implementation of remote APIs for service-oriented enterprise applications.</li><li>4. Authentication and authorization in enterprise application.</li></ol>
Work placement	Not applicable

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