University of Gdańsk

Subject card

Subject name and code	Database applications, PG_00143573		
Field of study	Informatics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	5.0
Learning profile	academic	Assessment form	
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Wiesław Pawłowski	
	Teachers		

Lesson types

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	0.0	65.0	125

Subject objectives

The purpose of the course is to familiarize students with the most important aspects of database application development, including the use of the most popular models relational and document-based.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[INFL3_W06] has a structured knowledge of various models of database systems, with particular emphasis on the relational model	knows the most important advantages of the relational model and the document model and can use them in practice	[SW5] implementation of a problem task
[INFL3_U08] has the ability to select the type of database depending on the needs, create an adequate data model and use it to build database applications	is able to design and implement a database application selecting an appropriate data model	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[INFL3_U02] can precisely formulate questions to deepen one's understanding of a given topic or find missing elements of reasoning	can analyze a problem/task in terms of its database modeling	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written

Subject contents

- JavaScript and the Node.js environment
- Principles of creating and using RESTful APIs
- Using SQL servers from within Node.js - tools and libraries
- Using MongoDB from within Node.js - tools and libraries
- Design and implementation of the examination project

<table>
<tr><td>Prerequisites and co-requisites</td><td>• acquaintance with the relational model and SQL language</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>programming colloquia</td><td>51.0%</td><td>30.0%</td></tr>
<tr><td>examination project</td><td>51.0%</td><td>70.0%</td></tr>
</table>
</td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>• E. Brown, Web Development with Node and Express, 2nd Edition, OReilly Media, 2019.
• S. Brandshaw, E. Brazil, K. Chodorow, MongoDB: The Definitive Guilde, OReilly Media, 2020.
• S. Springer, Node.js: The Comprehensive Guide, Rheinwerk Computing, 2022.</td></tr>
<tr><td>Supplementary literature</td><td>• F, Dogilo, REST API Development with Node.js, Apress, 2018.
• D. Herron, Node.js Web Development, Fifth Edition, Apress, 2020.
• A. Mend, Learning Node.js Development, Packt Publishing, 2018.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>

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