GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Frameworks and tools for data engineers, PG_00064004		
Field of study	Data Engineering, Data Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study 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	2	Language of instruction	English
Semester of study	4	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Software Engineering -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Michał Zawadzki	
	Teachers	dr inż. Michał Zawadzki mgr inż. Marcin Kwiatkowski dr inż. Grzegorz Gołaszewski	

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	8.0	32.0	100

Subject objectives

The aim of the course is to familiarize students with project management methodologies and methods and tools supporting the organization of work within these projects.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W02] demonstrates advanced preparation in methods and techniques for formulating and solving problems	The student demonstrates advanced preparation in choosing project management methodology, methods, and tools supporting project organization. Additionally, the student formulates problem issues necessary to meet the assumed project goals.	[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge
[K6_U03] demonstrates professional and effective teamwork, both as a leader and as a team member	The student is able to work in a team, fulfilling specific roles defined for the selected project management methodology. The student is also able to use tools and methods supporting the organization of work in the project.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
[K6_K03] demonstrates the ability to think critically and analytically and integrates knowledge from many disciplines in order to make effective decisions	The student can make decisions regarding the work methodology, methods, and tools used to produce the product required in the project.	[SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work [SK1] Assessment of group work skills [SK2] Assessment of progress of work

<table>
<tr><td>Subject contents</td><td>Course content – lecture

1. Introduction to lightweight methodologies

2. Managing projects in Scrum

3. Using code versioning tools

4. Continuous integration

5. Continuous deployment

6. Virtualization/containerization

Course content – laboratory
1. Familiarizing students with the Scrum methodology in practice students will lead a project using this methodology.
2. Practical work with code versioning tools and building CI/CD workflows.
3. Practical presentation and use of the Docker environment.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Ability to program in at least one 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>Tests</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>Tasks' presentation</td><td>50.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>Nigel Poulton, Docker Deep Dive: Zero to Docker in a single book, 2024 edition,

Stephanie Ockerman, Simon Reindl, Mastering Professional Scrum: A Practitioners Guide to Overcoming Challenges and Maximizing the Benefits of Agility (The Professional Scrum Series) 1st Edition</td></tr>
<tr><td>Supplementary literature</td><td>None</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Prepare the Product Backlog using the given tool.

2. Create and configure a code repository in the chosen Git tool

3. Define the branch management policy

4. Configure CI/CD</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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