GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Data Visualization in Technology, PG_00059227		
Field of study	WIZUALIZACJA DANYCH W TECHNICE		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Partment of Metrology and Information Systems -> Faculty of Electrical and Control Engineering -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Anna Golijanek-Jędrzejczyk	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	15.0	0.0	30

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	30	3.0	17.0	50

Subject objectives

The aim of the course is to prepare students for work related to the design of ergonomic interaction systems for automation devices.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K02] can interact and work in a group assuming various roles and identify priorities for the achievement of a specific task	He has the ability to work in a team, taking on various roles within it.	[SK4] Ocena umiejętności komunikacji, w tym poprawności językowej [SK3] Ocena umiejętności organizacji pracy [SK2] Ocena postępów pracy [SK1] Ocena umiejętności pracy w grupie
[K7_W02] has a structured knowledge of the application of information systems to improve the reliability, efficiency, speed and mobility of control and management systems	Based on the acquired knowledge, they are able to apply IT systems to increase the reliability, efficiency, speed and mobility of control and management systems.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW2] Ocena wiedzy zawartej w prezentacji [SW1] Ocena wiedzy faktograficznej

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Information theory. Historical methods of information transfer. Definition of visualisation. Tasks of visualisation. Application of visualisation. Infovis definition, history, development and tasks of this discipline. Visual perception. Principles of colour selection in visualisation. Methods of information visualisation. Examples of poorly
executed data visualisations. Examples of well-prepared visualisations. Principles of designing good visualisations.
Data exploration techniques. Key concepts of data exploration. Fields of visualisation. Dimensionality of the field of visualisation. Principles of visualisation design. Principles of technical documentation preparation.
Testing visualisation: methods, areas of testing, correctness of results, performance testing, testing pitfalls.
Infographics: definition, history and development. Principles of infographic design. Infographic tools. Methods of
presenting symbolic data. Pictograms.
Course content – project
Preparation of two visualisation projects in a group for the system specified by the lecturer and technical documentation for the final project.
The first project will concern the visualisation of measurement data from a research experiment .
The second project will consist of: project documentation (project objectives and tasks, as well as tests carried out; it should include interface user instructions), a computer model of the interface, and a presentation of the prepared project during class.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></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>Project implementation</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>--</td></tr><tr><td>Supplementary literature</td><td>--</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. Definition of visualisation.
2. Classification and characteristics of visualisation.
3. Symbolic data and methods of presentation.
4. Stages of designing visualisation systems.
5. Principles of technical documentation development.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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