GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Visualization and Multimedia in Technology, PG_00038327		
Field of study	Automation, Robotics and Control Systems		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Specialty subject group Subject group related to scientific research in the field of study
Mode of study	Part-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	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 inż. Anna Golijanek-Jędrzejczyk	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	10.0	0.0	10.0	0.0	0.0	20

E-learning hours included: 0.0

Adresy na platformie eNauczanie:

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	20	4.0	26.0	50

Subject objectives

The aim of the course is to prepare students to work on designing 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	The student is able to work in a group.	[SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills [SK2] Assessment of progress of work
[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		

Subject contents

Lectures Information theory. The concept of visualization, data visualization, scientific visualization. Historical examples of scientific visualization. Traps visualization: visual illusions - formation mechanisms. Unambiguous and ambiguous visual illusions. Visualization of data - the relationship between the presentations of data: graphic forms. Selection of graphic type and dimensionality range fields and dependencies. One-dimensional and multidimensional range visualization. Improving the readability of data visualization: ordering data. Methods of symbolic data presentation, the role of size, multidimensional symbols. The role of color in visualization. Inquiries in the visualization. Design of visualization systems. Visualization in technical sciences and natural sciences. Multimedia techniques. Media opportunities. The use of media in the visualization.
Laboratory Preparing a user-friendly visualization system for a device/system. Preparing documentation for the designed system.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Practical exercise	60.0%	100.0%

Recommended reading	Basic literature	1. Cooper A., Wariaci rządzą domem wariatów. Dlaczego produkty wysokich technologii doprowadzają nas do szaleństwa i co zrobić, żeby tego uniknąć. 2004. 2. Jacek Matulewski, Tomasz Dziubak, Marcin Sylwestrzak, Radosław Płoszajczak:" Grafika. Fizyka. Metody numeryczne. Symulacje fizyczne z wizualizacją 3D." Wydawnictwo Naukowe PWN 2010. 3. 3. Garr Reynolds: „Zen prezentacji. proste pomysły i ważne zasady". Helion 2009.
	Supplementary literature	1. Bednarek J., Multimedia w kształceniu. PWN, Warszawa 2006. 2. Paul Beynon-Davies: „Inżynieria systemów informacyjnych". WNT W-wa 2004.
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Definition of visualization. 2. Classification and characteristics of visualization. 3. Data and methods of symbolic presentation. 4. Steps in designing visualization systems. 5. Rules for the drafting of technical documentation.	
Work placement	Not applicable	

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