GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Industrial User Interfaces, PG_00047518		
Field of study	Automatic Control, Cybernetics and Robotics		
Date of commencement of studies	February 2024	Academic year of realisation of subject	2024/2025
Education level	second-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	1	Language of instruction	English
Semester of study	2	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Decision Systems and Robotics -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tomasz Białaszewski	
	Teachers	mgr inż. Marek Grzegorek dr inż. Tomasz Białaszewski	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15	2.0	8.0	25

Subject objectives
Familiaraze students with selected I / O devices Paying attention to the diversity of interfaces Presentation of a general interface design scheme Indicate the directions of further development of interfaces

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, making assessment and critical analysis of the prepared software as well as a synthesis and creative interpretation of information presented with it	Student is familiar with popular libraries used for implementation of user interfaces and communication with interaction devices.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information
[K7_W21] Knows and understands, to an advanced extent, methods and techniques of design and operation of automatic control systems, control and robotics systems, as well as the use of computers in the control and monitoring of dynamic objects	Student is familiar with theoretical principles of speech, natural language, vision and inertial signal processing models for gesture based user interfaces. Student knows basic of the design process of graphics user interfaces.	[SW1] Assessment of factual knowledge
[K7_W01] Knows and understands, to an increased extent, mathematics to the extent necessary to formulate and solve complex issues related to the field of study.	Student is familiar with common use cases of interaction devices and has basic knowledge about acoustic and vision signals and natural language.	[SW1] Assessment of factual knowledge
[K7_U01] can apply mathematical knowledge to formulate and solve complex and non-typical problems related to the field of study by:n-appropriate selection of source information and its critical analysis, synthesis, creative interpretation and presentation,n-application of appropriate methods and toolsn	The student knows the methods of interface design, plans the appropriate user interface by analyzing requirements, the working environment and the purpose of the device	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information

Subject contents

Introduction: principles of assessment, which is an interface, history
Devices interaction 1
Devices interaction 2
Styles of human-computer interaction, text interface
The graphical interface, the categories of controls
Presentation of controls, functions
Menus, windows, icons and tiles
direct manipulation
forms
Acoustic signals and natural language
multimedia Systems
Virtual reality
Augmented reality
Interface Design 1
Interface Design 2

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	50.0%	100.0%

Recommended reading

Basic literature	"Podstawy interfejsów użytkownika", Witold Malina, Mariusz Szwoch, PWNT Gdańsk 2015 https://en.wikipedia.org/wiki/User_interface https://pl.wikipedia.org/wiki/Interfejs_%28urz%C4%85dzenie%29
Supplementary literature	https://en.wikipedia.org/wiki/User_interface_design
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	What is user interface? What style of interaction are used? What are elements of interface? What are the general rules for the design of user interface?
Work placement	Not applicable