



## Subject card

Subject name and code	Interface in technology, PG_00062385						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2026/2027		
Education level	first-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Metrology and Information Systems -> Faculty of Electrical and Control Engineering						
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	15.0	0.0	0.0	20.0	0.0	35
	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	35		7.0		33.0	75
Subject objectives	The aim of the course is to obtain knowledge in the field of designing useful HCI/HMI interfaces.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_K02] can work in a group taking on different roles in it	The student learns the specifics of work in the project group.			[SK1] Assessment of group work skills [SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice		
	[K6_U02] can work individually and in a team, can communicate using various techniques in a professional environment, as well as document and analyze the results of their work, can estimate the time needed to perform the entrusted task can prepare and present a presentation on the problems and results of an engineering task	The student can write technical documentation, as well as correctly estimate the time for implementation of individual tasks detailed.			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [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_W07] has basic knowledge related to control and automation systems	The student classifies and designs HCI/HMI interface systems.			[SW3] Assessment of knowledge contained in written work and projects			

Subject contents	<p>Lectures</p> <p>Principles and tools of project management. Introduction to the topic: human-machine interface HMI i human-computer HCI. Human properties. Human perception of colors and sounds. Influence internal and external factors. Information theory. Usable quality of an IT product. Software usability and GUI (graphical user interface) ergonomics and principles preparing an ergonomic interface. Analysis of selected GUIs in terms of usability. Testing GUI. Principles of preparing good documentation and assistance. Industrial information systems i visualizations. Hardware interfaces. Touch panel technology. Selected lectures delivered by industry specialists.</p> <p>Project</p> <p>Ergonomic user interface design. Development of good technical documentation constructed interface and presentation of its operation.</p>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 629 794 663">Subject passing criteria</th> <th data-bbox="799 629 1137 663">Passing threshold</th> <th data-bbox="1142 629 1481 663">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 669 794 703">Lecture - written test</td> <td data-bbox="799 669 1137 703">60.0%</td> <td data-bbox="1142 669 1481 703">50.0%</td> </tr> <tr> <td data-bbox="456 710 794 730">Project</td> <td data-bbox="799 710 1137 730">60.0%</td> <td data-bbox="1142 710 1481 730">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Lecture - written test	60.0%	50.0%	Project	60.0%	50.0%
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Project	60.0%	50.0%										
Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. Cooper A., Wariaci rządzą domem wariatów. Dlaczego produkty wysokich technologii doprowadzają nas do szaleństwa i co zrobić, żeby tego uniknąć. 2004.</li> <li>2. Wysocki R. Efektywne zarządzanie projektami. Onepress, 2018.</li> <li>3. Malina W., Szwoch M. Podstawy projektowania interfejsów użytkownika. Helion, 2017.</li> <li>4. Osińska V.: Wizualizacja informacji. Studium Informatologiczne. WNUMK, Toruń 2016.</li> <li>5. Claus O. Wilke: Podstawy wizualizacji danych. Zasady tworzenia atrakcyjnych wykresów. Helion, 2020.</li> </ol>										
	Supplementary literature	<ol style="list-style-type: none"> <li>1. Bogdan Wiszniewski, Bogdan Bereza-Jarociński Teoria i praktyka testowania programów PWN 2009</li> <li>2. Paul Beynon-Davies: Inżynieria systemów informacyjnych. WNT W-wa 2004.</li> </ol>										
	eResources addresses	Adresy na platformie eNauczanie:										
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> <li>• GUI definition.</li> <li>• Principles of designing a useful interface.</li> <li>• The definition of latency and how to avoid it.</li> <li>• Classification of hardware interfaces.</li> <li>• Classification of touch panels.</li> </ul>											
Work placement	Not applicable											