GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Human-computer interaction, PG_00045305		
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	Polish
Semester of study	4	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Informatics In Management -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Marcin Sikorski	
	Teachers	prof. dr hab. inż. Marcin Sikorski	

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

- familiarize students with the principles of building effective human-computer interaction
- learn how to design, evaluate and improve ergonomics of the user interface
- acquire practical skills of conducting usability tests and organizing cooperation with users during an IT project

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W07] analyzes business processes in an advanced way in the technical, legal, economic, financial and social context	Student knows methods for organizing collaboration between the supplier and the client (users) in an IT project	[SW1] Assessment of factual knowledge
[K6_U07] uses information technologies to improve the acquisition, analysis and processing of data in business applications	Student uses information technology to design human-computer interactions, improving the acquisition, analysis, and processing of data in the context of users in business applications.	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
[K6_W06] classifies the acquired information, assessing its usefulness in solving the formulated problems	The student classifies the information obtained regarding the principles of interaction design and user interface construction, evaluating their relevance to solving problems related to designing effective human-computer interaction systems	[SW1] Assessment of factual knowledge

<table>
<tr><td>Subject contents</td><td>Course content – lecture
1. Ergonomics, usability and User Experience.
2. Characteristics of the user.
3. GUI interface - guidelines and principles of design. Methods of development.
4. Web interface - guidelines and principles of design. Methods of development.
5. UCD approach - quality management, User-Centred Design methodology.
6. UCD approach - methods for eliciting requirements, context of use analysis.
7. UCD approach prototyping , evaluation and usability tests.
8. UCD approach collecting data from users. Surveys and questionnaires.
9. UCD approach reporting results from usability studies.
10. Methods of collaboration with users in IT projects.
11. Multimodal and natural user interfaces.
12. Developing economic interactions. Trust on-line in e-business and in e-services.
13. Creativity and innovation in developing interactions on-line between customer and service vendor.

14. Designing user interactions with AI-based services.

Course content – laboratory
1. Preparing an idea for a digital service (mobile application).
2. Analysis of user needs.
3. Empathy map, Persona, identifying product functionality.
4. Collecting user stories.
5. User story mapping.
6. User flow, storyboard, screen flow.
7. Preliminary (Low-Fi) prototypes.
8. Task scenarios for testing the Low-Fi prototype.
9. Evaluation and testing of the Low-Fi prototype.
10. Introduction to detailed (digital, Hi-Fi) prototyping.
11. Construction of a detailed (digital, Hi-Fi) prototype.
12. Construction of a detailed (digital, Hi-Fi) prototype.
13. User-based testing of a detailed (digital, Hi-Fi) prototype.
14. Prototype presentation.</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>laboratory exercises</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>written coloqium</td><td>60.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>• Sikorski, M. (2021). Interaction Design in Agile IT Projects. Gdańsk University of Technology. ISBN 978-83-7348-840-3
• Sharp H., Rogers Y., Preece J. (2023): Interaction Design. Beyond Human-Computer Interaction. Wiley,</td></tr>
<tr><td>Supplementary literature</td><td>Schneiderman B., et al. (2017). Designing the User Interface: Strategies for Effective Human-Computer Interaction. Pearson</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Exemplary questions:
- user-system interaction techniques
- prototyping in user interface design
- methods of cooperation with users during an IT project</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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