GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Website Design Techniques, PG_00068169		
Field of study	Biomedical Engineering, Biomedical Engineering, Biomedical Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Biomedical Engineering -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Tomasz Neumann	
	Teachers	mgr inż. Antoni Górecki dr Tomasz Neumann mgr inż. Natalia Kowalczyk Paulina Leszczełowska	

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	6.0	39.0	75

Subject objectives	The aim of the course is to introduce fundamental web tools and technologies for creating interactive websites, enabling the practical development of applications related to biomedical engineering, in accordance with the Model-View-Controller architectural pattern.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U07] can apply methods of process and function support, specific to the field of study	The student has acquired the ability to design and implement web applications addressing issues in the field of biomedical engineering.	[SU3] Assessment of ability to use knowledge gained from the subject
[K6_W04] knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	The student has acquired knowledge enabling the use of web tools and technologies for creating and modifying interactive websites in accordance with an architectural model.	[SW2] Assessment of knowledge contained in presentation
[K6_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	The student has acquired the ability to use web tools and technologies such as HTML, CSS, JavaScript, PHP, XML, JSON, etc., to implement issues related to biomedical engineering, while producing appropriate project documentation and a final presentation of the results.	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment

Subject contents

Course content – lecture

Lecture:

1. **Work organization:** project planning and management, use of IDEs for web development, browser developer tools, and code debugging.
2. **HTML:** introduction to HTML tags, basic content elements (headings, paragraphs, lists, links, etc.), forms and interactive elements, creation of semantic web pages.
3. **CSS:** fundamentals of CSS selectors, setting element sizes and spacing, text formatting, responsive design, animations, and transitions.
4. **JavaScript:** basics of JavaScript (variables, functions, operators), data exchange using XML and JSON formats, dynamic content manipulation with JS, event handling, form data validation, dynamic content loading using AJAX and related frameworks.
5. **PHP:** PHP syntax fundamentals (variables, functions, objects), form handling, object validation, creation of dynamic web pages using PHP, data storage in SQLite file-based databases.
6. Code quality and maintenance: project testing and website accessibility evaluation.

Course content – project

Project:

1. Project management, use of web technologies such as HTML, CSS, JavaScript, and PHP, with the option to incorporate frameworks for building websites related to biomedical engineering. Includes accessibility testing of the web application, project documentation, and final results presentation.

Prerequisites and co-requisites

Not applicable

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written examinations assessing theoretical knowledge	51.0%	40.0%
Project development strategy	51.0%	60.0%

Recommended reading

Basic literature	1) David DuRocher, HTML and CSS QuickStart Guide, 2021 2) Jon Duckett, JavaScript and jQuery : interactive front-end web development, 2014 3) Matt Zandstra, objects, patterns, and practice : mastering OO enhancements, design patterns, and essential development tools, 2021

	Supplementary literature	1) Duckett Jon, Front-End Back-End Development with HTML, CSS, JavaScript, jQuery, PHP, and MySQL, John Wiley & Sons, 2022
	eResources addresses	
Example issues/ example questions/ tasks being completed	**Knowledge Test:** • What is the difference between the *div* and *p* tags in HTML? • Which CSS property is used to change the background color of an element? **Project Assignment:** • Create a web application for collecting, presenting, and manipulating data from home blood pressure measurements.	
Practical activites within the subject	Not applicable	

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