GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Network applications, PG_00069097		
Field of study	Technical Physics		
Date of commencement of studies	February 2026	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	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Theoretical Physics and Quantum Computing -> Faculty of Applied Physics and Mathematics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Bartosz Reichel	
	Teachers	dr inż. Bartosz Reichel	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	0.0	0.0	45

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	45	5.0	25.0	75

Subject objectives

Knowledge of network technology used in the creation of applications for both server and client side.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K03] can communicate and present results of own work and transfer information in a commonly understandable manner	Project presentation (in group).	[SK2] Assessment of progress of work
[K7_W03] has knowledge of current development paths and discoveries in the scope of physics and related fields of science and technology	It uses selected elements (such as machine learning) in the implementation of the project (both as part of the project and as a tool for implementation).	[SW3] Assessment of knowledge contained in written work and projects
[K7_U02] has enhanced knowledge of programming languages and can use software packages	Can run the selected programming package	[SU1] Assessment of task fulfilment

Subject contents

Course content – lecture

1) What are web applications and what languages/scripts/platforms can be used to create them?

2) An overview of the most popular platforms for creating web applications.

3) The ASP.NET framework with MVC and similar elements.

4) The PHP, Python, and other scripting languages.

5) An overview of frameworks for PHP and other languages.

6) Creating web applications using the UDP and TCP transport layers, and implementing custom protocols in the application layer.

Course content – laboratory

Implementation of the selected solution in a version with a high TRL (Technology Readiness Level) > 6. Learning how to prepare the solution for the testing phase (before implementation). Solution completeness (e.g., installer).

Prerequisites and co-requisites

no

<table>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Practical exercise</td><td>50.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">S.Orłowski, C#. Tworzenie aplikacji sieciowych. 101 gotowych projektów, Helion D.E. Comer , Sieci komputerowe i intersieci, WNT, Warszawa, 2003 A. Sopala, Pisanie programów internetowych, Mikom, Warszawa, 2000</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">None</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">- Client-server application based on datagram / connection
- Application: blocking and non-blocking base on TCP
- WebService using REST architectural style</td></tr>
<tr><td>Practical activites within the subject</td><td colspan="3">Not applicable</td></tr>
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