GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of Computer Science, PG_00064109		
Field of study	Mechanical and Medical 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	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division of Applied Mechanics and Biomechanics -> Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Wiktoria Wojnicz	
	Teachers	mgr inż. Kornel Piłat dr hab. inż. Wiktoria Wojnicz	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	30.0	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	4.0	36.0	100

Subject objectives

The aim of the study is to acquire knowledge in the fundamentals of programming in medicine

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K01] knows his/her proficiencies and his/her limitations in performing professional tasks, he/she is aware of needing to improve his/her skills through the whole life, he/she has entrepreneurship and innovation skills, he/she is aware of engineering skills from the society point of view	Student develops his/her compences in the scope of fundamental of programming to solve engineering problems	[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work
[K6_U03] is able to use information and communication skills or research techniques to solve typical engineering tasks related to design, production and manufacturing of materials or machine components	Student can use knowledge acquired in this subject to create a code to process measurement data	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Lecture:

MATLAB engineering tools to process data in medical measurements:

files processing

types of data and reading of data

data visualization

reading files obtained from medical measurement (txt, CSV, DICOM etc.)

implementation of basic functions, loops and conditional expressions

data matrix processing

Project:

Task1: processing of data obtained from biomechanical sensors

Task 2: processing of data obtained from biomedical measurements</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Maths</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>project passing</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>lecture passing</td><td>50.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>https://www.mathworks.com/support/learn-with-matlab-tutorials.html</td></tr>
<tr><td>Supplementary literature</td><td>https://www.mathworks.com/support/learn-with-matlab-tutorials.html</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Create a code to read data from the electromyography measurements

Create a code to process data obtained from the force sensor</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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