



Subject card

Subject name and code	Fundamentals of informatics in medicine, PG_00055732						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
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	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Wojciech Macek				
	Teachers		mgr inż. Kornel Piłat				
			dr hab. inż. Wojciech Macek				
Lesson types and methods of instruction	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_U03] he/she is able to use information-communication skills to solve typical engineering tasks related to design, production and utilization		Student can applying MATLAB software to solve basic engineering problems		[SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	[K6_K01] he/she 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 can formulate strategy to find a solution on the base of the base of the knowledge acquired in the scope of this subject		[SK2] Assessment of progress of work [SK3] Assessment of ability to organize work		

Subject contents	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			
Prerequisites and co-requisites	Maths		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project passing	50.0%	50.0%
	lecture passing	50.0%	50.0%
Recommended reading	Basic literature	https://www.mathworks.com/support/learn-with-matlab-tutorials.html	
	Supplementary literature	https://www.mathworks.com/support/learn-with-matlab-tutorials.html	
	eResources addresses	Adresy na platformie eNauczanie: Podstawy informatyki w medycynie, P, IMM, sem.01, zimowy 22/23 - Moodle ID: 25974 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25974	
Example issues/ example questions/ tasks being completed	Create a code to read data from the electromyography measurements		
	Create a code to process data obtained from the force sensor		
Work placement	Not applicable		