



## Subject card

Subject name and code	, PG_00056084						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2024/2025		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		1.0		
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. Marek Galewski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	5.0	0.0	0.0	15
	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	15		0.0		0.0	15
Subject objectives	Presenting students essential information about applications of microprocessors in medicine						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W13] he/she has knowledge related to application of engineering approaches in medicine or application of medical devices and rehabilitation devices		Student describes selected elements of the architecture of MCU based embedded systems		[SW1] Assessment of factual knowledge		
	[K6_W07] he/she is able to design, manufacture and utilize machine parts and technical devices, he/she can prepare a technical documentation		Student describes the process of design and manufacturing of embedded system		[SW1] Assessment of factual knowledge		
	[K6_U06] he/she has skills to work in industry and follow the rules of safety regulations, he/she is able to analyze basic economics problems to delineate the direction of solution by using engineering methods		Student understands requirements and constraints applied on medical electronic systems		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_U08] he/she is able to assess whether proposed methods and tools can be used in practice to solve simple engineering task related to machine design, manufacturing and utilization		Student selects elements needed to develop a simple embedded system for medical applications		[SU5] Assessment of ability to present the results of task		
Subject contents	principles of operation of processors - microcontroler units;  essentials elements of microprocessor systems  embedded systems (with special accent on it's medical applications);  design and manufacturing of embedded systems						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Performing exercises during laboratoty classes	55.0%	40.0%
	Written test	55.0%	60.0%
Recommended reading	Basic literature	Galewski M. STM32. Aplikacje i ćwiczenia w języku C z biblioteką HAL, BTC, Legionowo, 2019	
	Supplementary literature	Kurczyk A. Mikrokontrolery STM32 dla początkujących. BTC, Legionowo 2019	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	List of exemplary questions will be presente before the end of the semester - at least 4 weeks ahead of the final test		
Work placement	Not applicable		