



## Subject card

Subject name and code	Programming in Matlab, PG_00047928						
Field of study	Biomedical Engineering, Biomedical Engineering, Biomedical Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Optional 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	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Fizyki Teoretycznej i Informatyki Kwantowej -> Instytut Fizyki i Informatyki Stosowanej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Patryk Jasik				
	Teachers		dr inż. Patryk Jasik				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	E-learning hours included: 0.0						
	Programowanie w Matlabie (2022) - Moodle ID: 24039 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24039">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24039</a>						
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	1.0		9.0	25	
Subject objectives	The main aim of the course is to show students functionalities and capabilities of the Matlab environment. The specific aim of the course is to develop practical programming skills in this environment, based on the programming knowledge acquired previously by students and using the knowledge of linear algebra and mathematical analysis.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[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 is able to use his knowledge of programming methods and techniques to create scripts in the Matlab environment.		[SU1] Assessment of task fulfilment		
	[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 knows and understands the principles, methods, and techniques of programming in the Matlab environment.		[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Introduction to Matlab environment. Basic features: arithmetic operations, variables, mathematical functions, vectors, graphs. Scripts and functions: creation of the scripts, creation of the functions, control blocks. Matrix Operations. Integration: symbolic integration and numerical integration. Differential Equations: symbolic solution of differential equations, numerical solution of differential equations.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		Reports of the three laboratory classes	50.0%
Recommended reading	Basic literature	1. Dokumentacja programu Matlab, <a href="http://www.mathworks.com/help/matlab/">http://www.mathworks.com/help/matlab/</a>  2. S. R. Otto, J. P. Denier, "An introduction to programming and numerical methods in Matlab", Springer	
	Supplementary literature	1. S. Attaway, "Matlab: A Practical Introduction to Programming and Problem Solving. Third Edition" Butterworth-Heinemann	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		