



Subject card

Subject name and code	, PG_00053434						
Field of study	Electrical Engineering						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2024/2025		
Education level	first-cycle studies	Subject group					
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Katedra Biomechatroniki -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Arkadiusz Żak				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	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	30		4.0		41.0	75
Subject objectives	The aim of the course is to familiarise students with the possibilities offered by the modern computing packages MATLAB and Mathematica for typical engineering calculations.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_K01		To extend students' knowledge with knowledge of computer tools that allow them to make engineering numerical and symbolic calculations.		[SK3] Assessment of ability to organize work [SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work		
Subject contents	In the area of lecture classes:						
	<ul style="list-style-type: none">To familiarize students with modern computational packages MATLAB and Mathematica.Differences in numerical and symbolic calculations.Application of numerical methods.Selection of solution algorithms for problems.Solution of specific problems using examples. In the area of computer classes: <ul style="list-style-type: none">Familiarizing students with the syntax of the languages of the presented computing packages.Solving problems that can be solved analytically using symbolic functions of Mathematica package.Solving these problems using numerical methods and comparing obtained solutions, procedure and numerical errors.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Laboratory		50.0%		50.0%		
	Lecture test		50.0%		50.0%		

Recommended reading	Basic literature	R. Pratap: MATLAB dla naukowców i inżynierów, Wydawnictwo Naukowe PWN, 2021 S. Wolfram: Mathematica (R) Book, Cambridge University Press, 1999
	Supplementary literature	None
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> • Solving matrix equations. • Symbolic solution of simple differential equations. • Interpolation, approximation and extrapolation on selected examples. • Statistical processing of measurement data. 	
Work placement	Not applicable	