GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00053434		
Field of study	Electrical Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2023/2024
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.	[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work

Subject contents

In the area of lecture classes:

- 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:

- 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
Lecture test	50.0%	50.0%
Laboratory	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	• 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	