GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Measurement and control software, PG_00052091		
Field of study	Nanotechnology		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2024/2025
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	6	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Solid State Physics -> Faculty of Applied Physics and Mathematics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marek Chmielewski	
	Teachers	dr hab. inż. Leszek Piotrowski dr inż. Marek Chmielewski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	0.0	0.0	45

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	45	6.0	49.0	100

Subject objectives

The purpose of the course is to familiarize students with the LabVIEW programming environment comprehensively used in the control of production systems as well as in the automation of research processes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W10	The student conducts and controls measurement experiments. Can independently design the basic measuring station, can select the places of introduction of control signals on the measuring station. Is able to effectively program the data acquisition part of the measurement system.	[SW1] Assessment of factual knowledge
K6_W04	The student is able to use the programming environment to present the result of the software work, he is able to conduct the process of communication and data exchange in formats that enable communication between programming platforms and systems presenting results in various forms, including graphic format.	[SW1] Assessment of factual knowledge
K6_K04	Work in the laboratory in group consist with three students, currently in single groups person. Cooperation in order to achieve the intended results. Planning and allocation of functions and roles in the process of handling the measuring equipment and data acquisition.	[SK1] Assessment of group work skills
K6_U05	The student will know the capabilities of different measurement techniques, discovers and suggests the possibility of their effective use in areas other than those performed during the lab. Learns software capabilities for advanced digital signal processing	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
K6_U04	While carrying out tasks related to laboratory topics, he learns the correct method of conducting an experiment, Realizes and understands the necessity of multitrack analysis of the obtained results. Correctly performs data processing procedures and effectively uses the results to determine the parameters under study.	[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment

Subject contents

The content of the course is to learn and make practical use of the LabView programming environment. The main assumption of the system's functionality will be presented and practical classes on the basics of programming in this environment will be conducted.

Prerequisites and co-requisites

Not required

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test funkcjonalności i estetyka	60.0%	100.0%

Recommended reading

Basic literature	National Instrument - Internet sources
Supplementary literature	not required
eResources addresses	Adresy na platformie eNauczanie: Oprogramowanie pomiarowe i sterujące - Moodle ID: 45350 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45350

Example issues/ example questions/ tasks being completed

Classic elements of programming languages used in the LabVIEW environment.

Controls, pointers, local variables. Front panel vs. block diagram

Work placement

Not applicable

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