GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Programming in LabView, PG_00062726		
Field of study	Technologies for Industry 5.0		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marek Chmielewski	
	Teachers		

Lesson types

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	5.0	25.0	75

Subject objectives

The purpose of the course is to familiarize the student with the capabilities of National Instruments' LabVIEW engineering software at a level that allows individual development of simple, functional applications. As part of the course, the student will learn the capabilities of the environment and the basics of using the graphical programming system used in the LabVIEW language. The lecture will present, based on examples, the range of possible applications of the environment in the support and operation of research measurement systems from the level of operation control to advanced post processing operations or report preparation. The scope of possible applications of the environment will also be presented, from simple IT systems to advanced solutions cooperating with industrial controllers. The course makes it possible to approach the CLAD certification exam.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U01] applies knowledge of mathematics, physics, chemistry, IT tools and other engineering disciplines to solve theoretical, engineering and technological problems	The student is able to independently, on the basis of his knowledge, construct an algorithm and apply the knowledge of technical sciences to solve any scientific problem. Applies in an optimized way the rules of physics mathematics chemistry to improve existing industrial and research control systems.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
[K6_W01] demonstrates knowledge and understanding of mathematics, physics, chemistry and IT tools at the level necessary to formulate and solve typical engineering and technological problems	The student is able to independently, on the basis of his knowledge, create software to solve a problem related to the automation of the measurement process, the analysis of measurement data, a problem in any technical tasks.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents

Course content – lecture
Lecture linked to workshop and laboratory activities. During the course, the student will learn the idea and capabilities of LabVIEW software. Areas in which engineering software is used will be presented. The user interface of the environment and implementations of basic software structures will be presented. The process of creating simple applications will be presented, in the form of a workshop, which will be gradually expanded to include the widest possible range of procedures and functions available in the LabVIEW environment. Advanced elements of the environment will be presented, along with the process of distributing finished applications. The range of topics applicable to the CLAD certification exam will be presented.

Prerequisites and co-requisites

Not required

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Projects carried out in classes</td><td>100.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Online resources provided by Natinal Instruments among others:

https://www.ni.com/pdf/gettingstarted/
introduction_to_labview_tutorial.pdf

https://learn.ni.com/pages/getting-started

https://www.labviewmakerhub.com/doku.php?
id=learn:tutorials:labview:basics</td></tr>
<tr><td>Supplementary literature</td><td>Not Required</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Graphical development environment

Block diagram, front panel.

Controls and indicators.

Variable races (Races conditions)

State machine algorithms</td></tr>
<tr><td>Practical activites within the subject</td><td colspan="2">Not applicable</td></tr>
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