GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Programming of Computer Applications, PG_00018253					
Field of study	Electrical Engineering					
Date of commencement of studies	February 2023		Academic year of realisation of subject		2023/2024	
Education level	second-cycle studies		Subject group			
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		4.0	
Learning profile	general academic profile		Assessment form		assessment	
Conducting unit	Department of Power Electronics and Electrical Machines -> Faculty of Electrical and Control Engineering					
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Andrzej Wilk				
	Teachers	dr hab. inż. Andrzej Wilk				

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	15.0	40.0	100

Subject objectives	The main goal of this course is: • guide of modern programing environment devoted to development of computer programs for Windows operating system; • study of object oriented programming using managed C# language; • developing of computer applications using Windows Forms type project.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K7_K03	The student is able to create computer programs in teamwork	[SK3] Assessment of ability to organize work
	K7_W09	The student has large knowledge on object-oriented programming	[SW3] Assessment of knowledge contained in written work and projects
	K7_U12	The student knows the principles of object-oriented programming: inheritance, encapsulation and polymorphism	[SU1] Assessment of task fulfilment

Subject contents	LECTURE: The C# language - managed code. Data types, instructions, and classes. Inheritance in C# language. The Frame windows and its main components. Representation and managing of Windows application by NET Framework classes. Relationship between frame window object, view object, and control objects. Event-driven programming. Messages and commands in the framework. Message categories and message handler functions. Mechanism of message processing. Processes and threads in multithreaded applications. Types of threads in NET Framework applications. Creating worker threads. LABORATORY: Generating a NET Framework application skeleton. Extending and developing frame window, and control objects adding. Appending of custom generic classes. Windows message and command message events programming to handle: mouse clicks, keystrokes, timer interval message, window movement and resizing, and control events. Writing a worker threads and associated objects to synchronize and terminate threads.

Prerequisites and co-requisites	To know C# language

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Midterm colloquium	50.0%	30.0%
	Project	50.0%	70.0%

Recommended reading	Basic literature	1. Perry S.C.: C# i .NET. Helion 2006. 2. Boduch A.: Wstęp do programowania w języku C#. Helion 2006. 3. Templeman J., Vitter D.: Visual Studio .NET: .Net Framework. Helion 2003. 4. Wilk A.: Programowanie obiektowe. Instrukcje do ćwiczeń laboratoryjnych. Politechnika Gdańska, Gdańsk 2008.
	Supplementary literature	1. Hejlsberg A., Torgersen M., Wiltamuth S., Golde P.: Jezyk C#. Programowanie. Helion 2010.0.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	1. What are the principles of object oriented programming? 2. How is developed the Windows Presentation Foundation project type?	
Work placement	Not applicable	