



Subject card

Subject name and code	Programming of Computer Applications, PG_00038371							
Field of study	Electrical Engineering							
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024			
Education level	second-cycle studies	Subject group			Optional subject group			
Mode of study	Part-time studies	Mode of delivery			at the university			
Year of study	1	Language of instruction			Polish			
Semester of study	2	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	10.0	0.0	10.0	0.0	0.0	20	
	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	20	15.0		65.0		100	
Subject objectives	The main goal of this course is: <ul style="list-style-type: none">• guide of modern programming 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_W09	Student knows Object Oriented Programming using C# language			[SW2] Assessment of knowledge contained in presentation			
	K7_U12	Student knows class resources and creating class instantiations			[SU1] Assessment of task fulfilment			
	K7_K03	Student knows rules of team work at development of computer applications			[SK1] Assessment of group work skills			
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# and .NET. Helion 2006. 2. Boduch A.: Introduction into C# programming. Helion 2006. 3. Templeman J., Vitter D.: Visual Studio .NET: .Net Framework. Helion 2003. 4. Wilk A.: Object oriented programming. Tutorial and exersices. Gdansk University of Technology, Gdańsk 2008.						

	Supplementary literature	1. Hejlsberg A., Torgersen M., Wiltamuth S., Golde P.: The C# language. Programming. Helion 2010.
	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed		1. What are the principles of object oriented programming? 2. How is developed the Windows Forms project type?
Work placement		Not applicable