



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	<p>The main goal of this course is:</p> <ul style="list-style-type: none">• 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_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	