



Subject card

Subject name and code	Programming of Computer Applications, PG_00018253						
Field of study	Electrical Engineering						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
Education level	second-cycle studies		Subject group				
Mode of study	Full-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 -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Andrzej Wilk				
	Teachers		dr hab. inż. Andrzej Wilk				
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		15.0		40.0	100
Subject objectives	The main objective of the subject is to apply the principles of object-oriented programming in a desktop application. The sub-objectives that make up the main objective are: defining classes, defining properties, creating constructors, creating delegates, using lambda methods. Another group of sub-objectives is: using the mechanism of class inheritance, using encapsulation of class resources and using method polymorphism. The result of realizing all these objectives is the development of a desktop application of the Windows Presentation Foundation type on the passive RLC filter.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U12] is able to design and program computer applications using object-oriented programming, produce technical documentation technical documentation using CAD technology		He/She develop applications Windows Presentation Foundations type		[SU1] Assessment of task fulfilment		
	[K7_K03] can interact and work in a group assuming various roles and identify priorities for the achievement of a specific task		He/ She develop group projects in one solution		[SK1] Assessment of group work skills		
	[K7_U06] is able to analyse, model, simulate and design electrical systems		He/She is able to design a computer desktop application that is abstraction of electrical system.		[SU2] Assessment of ability to analyse information		
Subject contents	Course content – lecture						
	Lecture: The concept of a class. Constructors and destructors. Data fields, properties, methods, delegates and interfaces. Inheritance, encapsulation and polymorphism of methods. Developing desktop applications of the Windows Presentation Foundation type - C# and XAML language.						
	Course content – laboratory Laboratory: Modeling an RLC electrical filter in Windows Presentation Foundation application						
Prerequisites and co-requisites	Basics of computer science						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	50.0%	70.0%
	Midterm colloquium	50.0%	30.0%
Recommended reading	Basic literature	John Sharp: Microsoft Visual C# 2022 Krok po kroku, APN Promise, Warszawa 2022. Adam Nathan: WPF 4.5. Księga eksperta, Helion 2015. Wilk A.: Programowanie obiektowe. Instrukcje do ćwiczeń laboratoryjnych. Politechnika Gdańska, Gdańsk 2008.	
	Supplementary literature	Mark J. Price : C# 11 i .NET 7 dla programistów aplikacji wieloplatformowych. Twórz aplikacje, witryny WWW oraz serwisy sieciowe za pomocą ASP.NET Core 7, Blazor i EF Core 7, Helion, 2022.	
	eResources addresses		
	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?	
Practical activites within the subject	Not applicable		

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