GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	.NET Programming Languages, PG_00048004
Field of study	Informatics

Date of commencement of studies	October 2023	Academic year of realisation of subject	2026/2027
Education level	first-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	4	Language of instruction	Polish
Semester of study	7	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment

Conducting unit	Department of Algorithms and Systems Modelling -> Faculty of Electronics, Telecommunications and Informatics

Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Manuszewski
	Teachers	dr inż. Krzysztof Manuszewski

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	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	30	2.0	18.0	50

Subject objectives	To improve the practice of C# and other programming languages available at .NET platform.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U41] can produce, test or evaluate software using modern programming platforms, tools, languages and paradigms of different levels, as well as use software packages supporting scientific and research processes as well as business decision-making processes and teamwork	Is able to implement .Net application with .Net languages like C#, LINQ, F#, C++/CLI	[SU1] Assessment of task fulfilment
	[K6_W04] knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	Student is able to create applications in C#, VB. Student is able to mix the managed and unmanaged code in one application. Student utilises the abilities of CODE DOM	[SW1] Assessment of factual knowledge
	[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	Student is able to use VS for purpose the implementation of .NET applications that contains GUI.	[SU3] Assessment of ability to use knowledge gained from the subject
	[K6_W03] knows and understands, to an advanced extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum	Student understand the structure of .NET components and information exchange between components	[SW1] Assessment of factual knowledge
	[K6_W05] Knows and understands, to an advanced extent, methods of supporting processes and functions, specific to the field of study	Student knows methods of implementation of local .NET components	[SW1] Assessment of factual knowledge

Subject contents	1. Rules of assessment
	2. .NET programming languages
	3. C#"s basic syntax
	4. CLR,C# - types and statements
	5. CLR, C# - reference types and value types
	6. Nullable types
	7. CLR,C# - classes and structs; properties and its modifiers
	8. CLR,C# - container is a classes and indexers
	9. CLR,C# - jagged arrays
	10. CLR,C# - class and method attributes
	11. C# - exceptions
	12. CLR, C# - events and delegates
	13. CLR,C# - generics
	14. C# - partial classes
	15. C# - plugins support
	16. LINQ
	17. Anonymous types
	18. Lambda expressions
	19. VB.NET basic syntax
	20. Common .NET elements for VB
	21. C++ Managed extension
	22. C++ Managed and unmanaged code
	23. Common .NET elements for C++
	24. Managed opaqes for ANSI C++
	25. Using unmanaged code with VB/C#

	26. Jscript/VBScript Elements
	27. Test

Prerequisites and co-requisites	Object oriented programming.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Midterm colloquium	50.0%	50.0%
	Practical exercise	50.0%	50.0%

Recommended reading	Basic literature	C# in Depth / Jon Skeet, Manning Publications *Expert F# 4.0* / Don Syme, Adam Granicz, Antonio Cisternino, Apress
	Supplementary literature	Essential C# 8.0, Mark Michaelis, Addison-Wesley C# 8.0 in a Nutshell, Joseph Albahari, Eric Johannsen, O'Reilly C# 9 with .NET, 10th edition, Apress 2021 LEARNING F# - autorami są osoby ze Stack Overflow Expert .NET 2.0 IL Assembler, Serge Lidin, Apress
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable

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