DESCRIPTION OF THE COURSE OF STUDY

Course code	**0719-2ID-F52-PwJC**	
Name of the course in	Polish	***Programowanie w języku C#***
	English	***Programming in C#***

1. **LOCATION OF THE COURSE OF STUDY** within the system of studies

1.1. Field of study	**Data engineering**	
1.2. Mode of study	**Full-time studies**	
1.3. Level of study	**First degree**	
1.4. Profile of study*	**General Academic**	
1.5. Person/s preparing the course description	**Dr inż. Tomasz Ruść**	
1.6. Contact	**tomasz.rusc@ujk.edu.pl**	

2. **GENERAL CHARACTERISTICS OF THE** course of study

2.1. Language of instruction	**English**
2.2. Prerequisites*	**Programmer's environment, Introduction to programming, Object-oriented programming**

3. **DETAILED CHARACTERISTICS OF THE COURSE OF STUDY**

3.1. **Form of classes**		**lectures, laboratories, individual work**
3.2. **Place of classes**		**Traditional classes in didactic rooms of JKU**
3.3. **Form of assessment**		**lectures – exam, laboratory exercises – pass with grade, individual work – pass without grade**
3.4. **Teaching methods**		**lecture, computer laboratory classes**
3.5. **Bibliography**	**Required reading**	**1. J. Sharp, Microsoft Visual C# 2022 – Step by step. 1. Microsoft Press, 2022 2. J. Greene, A. Stellman Head First C#, 5rd Edition, 2024**
	Further reading	**online materials after approval by the instructor**

4. **OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES**

4.1. **Course objectives** ***(including form of classes)***

Lecture:

C1. Presenting the advantages of programming using the .NET environment.

C2. Improving object-oriented programming skills using C#.

Lab Exercises:

C1. Acquiring skills in creating console and WinForm applications in C#.

C2. Acquiring skills in creating application interfaces.

4.2. **Detailed syllabus** ***(including form of classes)***

Lecture and lab exercises

Introduction to the .NET Framework using Microsoft Visual C#. Program debugging methods.

C# syntax. The concept of an object, simple object examples, analogy to real-world objects. Access modes for class components, information hiding. Namespaces. Initializing class instances. Referencing attributes. Operators and their overloads. Class inheritance, accessing base class components, inheritance and class containment. Multiple inheritance. Polymorphism. Exceptions and their handling. Creating a GUI using WinForms and WPF. Project:

Students work in teams to complete a project of medium complexity.

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of **KNOWLEDGE:**		
W01	knows the basic concepts of object-oriented programming, understands how classes interrelate	ID1A_W11
W02	has knowledge of the advantages of programming in C# compared to other object-oriented languages	ID1A_W11
W03	knows technologies for creating user interfaces	ID1A_W11
within the scope of **ABILITIES:**		
U01	can design a graphical interface for handling data.	ID1A_U07 ID1A_U08 ID1A_U13
U02	has the ability to independently implement software in C#, remove errors and test object-oriented application code	ID1A_U07 ID1A_U08 ID1A_U13
within the scope of **SOCIAL COMPETENCE:**		
K01	is aware of the role of an engineer in providing the public with competent information on object-oriented programming in C#	ID1A_K03 ID1A_K04

4.4 Methods of assessment of the intended learning outcomes

Teaching outcomes *(code)*	Method of assessment (+/-)																	
				Report form laboratory			Projekt			Self-study								
	Forma zajęć			*Forma zajęć*			*Forma zajęć*			*Forma zajęć*			*Forma zajęć*			*Forma zajęć*		
	W	*L*	*P*	*W*	*L*	*W*	*W*	*W*	*P*	*W*	*L*	*P*	*W*	*L*	*P*	*W*	*L*	*P*
W01					+						+							
W02					+						+							
W03					+						+							
U01					+				+		+							
U02					+				+		+							
U03					+				+		+							
K01					+				+		+							

**delete as appropriate*

4.5 Criteria of assessment of the intended learning outcomes

Form of classes	Grade	Criterion of assessment
lecture (L)	**3**	co najmniej 50% i nie więcej niż 60% łącznej liczby punktów możliwych do uzyskania
	3,5	ponad 60% i nie więcej niż 70% łącznej liczby punktów możliwych do uzyskani
	4	ponad 70% i nie więcej niż 80% łącznej liczby punktów możliwych do uzyskani
	4,5	ponad 80% i nie więcej niż 80% łącznej liczby punktów możliwych do uzyskani
	5	ponad 90% liczby punktów możliwych do uzyskania
laClasses (C)	**3**	co najmniej 50% i nie więcej niż 60% łącznej liczby punktów możliwych do uzyskania
	3,5	ponad 60% i nie więcej niż 70% łącznej liczby punktów możliwych do uzyskani
	4	ponad 70% i nie więcej niż 80% łącznej liczby punktów możliwych do uzyskani
	4,5	ponad 80% i nie więcej niż 80% łącznej liczby punktów możliwych do uzyskani
	5	ponad 90% liczby punktów możliwych do uzyskania
	3	co najmniej 50% i nie więcej niż 60% łącznej liczby punktów możliwych do uzyskania

	3,5	ponad 60% i nie więcej niż 70% łącznej liczby punktów możliwych do uzyskani
	4	ponad 70% i nie więcej niż 80% łącznej liczby punktów możliwych do uzyskani
	4,5	ponad 80% i nie więcej niż 80% łącznej liczby punktów możliwych do uzyskani
	5	ponad 90% liczby punktów możliwych do uzyskania

5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

Category	**Student's workload**	
	Full-time studies	**Extramural studies**
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/	***75***	
*Participation in lectures**	30	
*Participation in classes, seminars, laboratories**	30	
Project	15	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	***50***	
*Preparation for the lecture**	10	
Preparation for the laboratory	40	
Project	15	
TOTAL NUMBER OF HOURS	***125***	
ECTS credits for the course of study	**5**	

****delete as appropriate***

Accepted for execution *(date and legible signatures of the teachers running the course in the given academic year)*

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