MEĐIMURSKO VELEUČILIŠTE U ČAKOVCU
MEĐIMURJE UNIVERSITY OF APPLIED SCIENCES IN ČAKOVEC

COURSE SYLLABUS	
ACADEMIC YEAR:	2025/2026

1. GENERAL COURSE INFORMATION

1.1 Course name	Object Oriented Programming 1			
1.2 Study program/s	Professional undergraduate study in Computer Engineering			
1.3 Course status (O,E)	O	**1.6 Mode of instruction (number of hours)**	Lectures	30
1.4 Course code			Exercises	30
1.5 Course abbreviation			Seminars	
1.6 Semester	III		E-learning	Merlin
1.7 ECTS	6	**1.7 Place and time of instruction**	The premises of the Međimurje University of Applied Sciences in Čakovec, according to the schedule published on the website	

2. TEACHING STAF.F

2.1 Course leader/s-title	PhD, Bruno Trstenjak, prof.	**contact**	btrstenjak@mev.hr
		contact	
2.2 Assistant/s- title		**contact**	
		contact	
2.3 Instruction held by-title	PhD, Bruno Trstenjak, prof.	**contact**	btrstenjak@mev.hr

3. COURSE DESCRIPTION

3.1. Course goals	Creating the skills and knowledge needed to effectively use modern object-oriented programming languages.
3.2 Prerequisites	Required input competencies are the use of the procedural programming paradigm, knowledge and use of data types and control structures, knowledge and use of one-dimensional and multidimensional data fields as defined by the learning outcomes of the course Programming. The condition for taking the course is the passed subject Programming.
3.3 Course outcomes	After successfully completing the course, students will be able to: I1 - Use simple (primitive, value) and complex (class-based) data types. I2 - Apply control structures of programming language. I3 - Apply classes and their components available in program libraries. I4 - Apply closure, inheritance and multiplicity. I5 - Use data storage structures. I6 - Use exception handling in program code. I7 - Use graphical user interface elements.
3.4 Contribution of the course to the study program	Develop applications using the object-oriented paradigm in solving programming tasks
3.5 Course content	In the course, students learn the basic concepts of object-oriented programming: classes, encapsulation, interface, inheritance and polymorphism. The difference between procedural and object-oriented programming paradigms. Development of console and GUI desktop applications. Exception handling, control structures, data storage collections.

3.6 Types of coursework	X	Lectures	X	Exercises		Blended e-learning	X	Individual activities		Laboratory
		Seminars and workshops		Distant learning		Field classes		Multimedia and network		Mentorship
		Other								

3.7 Language of instruction	Croatian

3.8 Monitoring students' work (enter the number of ECTS credits for each activity so that the total number of ECTS credits is equal to the total ECTS value of the course, 1 ECTS = 30 hours)	2	Class attendance		Seminars			Research
	2	Midterm exams/written exam		Project			Essay
		Oral exam	2	Practical task			

Activity specification	Percent %	Points
Assessment during instruction		
1. Intermediate exam (theoretical test)	10%	20
1. Intermediate exam (practical exam)	10%	20
2. Intermediate exam (theoretical test)	15%	30
2. Intermediate exam (practical exam)	15%	30
3. Intermediate exam (theoretical test)	20%	40
3. Intermediate exam (practical exam)	20%	40
Homework	10%	20
Exam assessment for the students who failed to fullfil all the obligatory requirements during the semester		
Theoretical test	*50%*	*100*
Practical exam	*50%*	*100*
Total:	**100%**	**200**

The initial criterion for calculating the grade is expressed in the following list:
- 100-125 Sufficient (2)
- 126-150 Good (3)
- 151-175 Very good (4)
- 176-200 Excellent (5)

3.9 Specific features related to taking the course	The course has 7 defined learning outcomes. A maximum of 200 points can be earned. Learning outcomes are scored and checked through the following methods: • First intermediate exam (M1): up to 40 points, of which 20 are achieved by a theoretical test and 20 by practical work. • Second intermediate exam (M2): up to 60 points, of which 30 are achieved by a theoretical test and 30 by practical work. • Third intermediate exam (M3): up to 80 points, of which 40 are achieved by a theoretical test and 40 by practical work.

	• Homeworks through semester: 20 points. To pass the course based on continuous assessment, the student must achieve at least 50% of the total possible points in the theoretical part of the exam (45/90 points) and 50% of the total possible points in the practical part of the exam (45/90 points). The final criterion for calculating the grade will be created based on the Normal distribution of the total points achieved by all students in the intermediate exams M1, M2 and M3. If the newly created criterion based on the Normal distribution is less favorable for students, they will apply the Initial criterion. Students who do not pass the colloquia are required to take the written and oral part of the exam. The condition for taking the oral part of the exam is passing the written part of the exam.
3.10 Students obligations	• Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. • Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. • If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. • Attendance can be offset by added assignments given by teachers. • One lesson lasts 45 minutes, and several hours form a teaching unit. • Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.

3.11 Written assignments		
3.12 Required reading	1.	Julijan Štribar, Boris Motnik: Demistificirani C++
3.13 Additional reading	1.	Joseph Albahari i Ben Albahari, C# 7.0 : za programere

4. ADDITIONAL INFORMATION ABOUT THE COURSE

4.1 Quality control	The quality of the program, teaching process, teaching skills and level of mastery of the material will be established by conducting a written evaluation based on questionnaires, and in other standardised ways and in accordance with the by-laws of the Međimurje University of Applied Sciences in Čakovec.
4.2 Contact the teacher	Students can contact the teacher during the office hours and during classes. All other methods of communication are arranged with the teacher. It is also possible to ask questions by e-mail, which will be answered in 48 hours at the latest. It is desirable for students to come as often as possible for any possible questions during the teacher's office hours.
4.3 Information about the course	It is the obligation of each student to be regularly informed about the course. All notifications about the classes or possible postponement of classes will be posted on the bulletin board and on the website of the University at least 24 hours in advance.

5. ELABORATION OF THEMATIC UNITS

Week	Topic	Course outcome
1.	Elements of the object model (abstraction, modularity, hierarchy)	I1
2.	Control structures	I2
3.	Concepts of class and object	I1, I2, I3
4.	Class construction, data members, and function members	I1, I2, I3
5.	Constructor and destructor	I3
6.	Value data types	I3
7.	Reference data types	I3
8.	Comparing value and reference data types	I2, I3, I5
9.	Static classes and class members	I1, I3
10.	Exception handling	I6
11.	Relationships between classes – composition, aggregation, inheritance	I3, I4
12.	Polymorphism	I4, I5, I6
13.	Abstract classes, interfaces	I4, I5, I6
14.	Object – Boxing, Unboxing	I5
15.	Graphical user interface applications	I2, I6, I7