



MEĐIMURSKO VELEUČILIŠTE U ČAKOVCU

MEĐIMURJE UNIVERSITY OF APPLIED SCIENCES IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR: 2024/2025

1. GENERAL COURSE INFORMATION

1.1 Course name	Programming			
1.2 Study program/s	Undergraduate Professional Study Programme Computer Engineering			
1.3 Course status (O,E)	O	1.6 Mode of instruction (number of hours)	Lectures	30
1.4 Course code			Exercises	45
1.5 Course abbreviation	PROG		Seminars	
1.6 Semester	II		E-learning	Merlin
1.7 ECTS	7	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 STAFF

2.1 Course leader/s-title	Bruno Trstenjak PhD Sanja Brekalo PhD	contact	btrstenjak@mev.hr sbrekalo@mev.hr
		contact	
2.2 Assistant/s- title		contact	
		contact	
2.3 Instruction held by- title	Bruno Trstenjak PhD Sanja Brekalo PhD	contact	btrstenjak@mev.hr sbrekalo@mev.hr
2.4 Course leader/s-title		contact	

3. COURSE DESCRIPTION

3.1. Course goals	After completing the course, the student will be able to apply a structured procedural programming language for solving simple programming problems and create a simple application using computer algorithms. Knowledge in the field of computer programming is acquired, the student enables to independently perform program tasks.
3.2 Prerequisites	None.
3.3 Course outcomes	After successfully completing the course, students will be able to: O1 - Define the variables and data types depending on the terms of reference O2 - Use the basic commands of the program structure depending on the requirements of the program tasks O3 - Apply various data structures in applications O4 - Use functional structures in the development of more complex applications and independently develop a software algorithm for solving problem tasks O5 - Create simple applications or functions based on the application of procedural programming language
3.4 Contribution of the course to the study program	SO7 Develop program code in multiple programming languages using modern methods and tools SO13 Develop applications using the object-oriented paradigm in solving programming tasks
3.5 Course content	The course presents content related to the development of desktop applications using a procedural language such as C ++ or Java. Emphasis on the application logic program structure, different data structures and the development of

	algorithms for solving simple programming tasks. In teaching units and exercises, the contents of the lectures are supported by implemented algorithms and solved tasks, both in lectures and in exercises.																																																																																																																														
3.6 Types of coursework	x	Lectures	x	Exercises		Blended e-learning	x	Individual activities		Laboratory																																																																																																																					
	x	Seminars and workshops	x	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)	2,5	Class attendance		0,5	Seminars			Research																																																																																																																							
	3,0	Midterm exams/written exam			Project			Essay																																																																																																																							
	1,0	Oral exam			Practical task																																																																																																																										
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3.9 Specific features related to taking the course	If a student collects 50% of the points of each outcome, he / she directly takes the exam, if he / she has submitted a seminar paper. A student cannot access the exam if he / she has not submitted a seminar paper. Seminar papers are prepared according to the instructions published on the Merlin system and are submitted by posting on the Merlin. The seminar paper should be submitted at least 3 days before the exam deadline.																																																																																																																														

3.10 Students obligations	<ul style="list-style-type: none"> • a full-time student has the right to sit for the exam if he attends classes for a minimum of 70% of the total prescribed number of hours • a full-time student who attends classes from 50 to 70% of the total prescribed number of hours can exercise the right to take the exam by completing additional teaching activities in agreement with the course teacher • a full-time student who attends a certain course for less than 50% of the prescribed number of hours enrolls in the course the following academic year • a part-time student has the right to sit for the exam if he/she attends classes for a minimum of 30% of the total prescribed number of hours • a part-time student who attends classes for 20 to 30% of the total prescribed number of hours can exercise the right to sit for the exam by completing additional teaching activities in agreement with the course teacher • a part-time student who attends the classes of a certain course for less than 20% of the prescribed number of hours re-enrolls in the course the following academic year 	
3.11 Written assignments		
3.12 Required reading	1.	Bruno Trstenjak, Programiranje C++, 2020
3.13 Additional reading	1.	Julijan Štribar, Boris Motnik: Demistificirani C++, 2018
	2.	Liam Damien : C++: Step by step Beginners Guide in Mastering C++, Independently published, 2019
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.	Introduction to the content of the course, teaching method, evaluation of students' work during the semester. Basic concepts of programming, types of errors, types of programming languages, properties of the C++ language.	O1
2.	Programming phases, concept of debugger, translator, concept of algorithm, program flow diagram.	O1
3.	Basics of the C++ language: identifiers, variables, constants, data types, input/output operations.	O2
4.	Operators: arithmetic, relational, logical, increase / decrease operators, conditional. Analysis of simple examples of solved tasks.	O2
5.	Program flow control commands: if, if-else, switch commands.	O2

6.	Midterm exam	
7.	Repeat commands (for, while, do-while). Analysis of simple examples of solved tasks.	O2
8.	Working with character strings (char, string). Basic functions for working with data. Analysis of simple examples of solved tasks.	O3
9.	Working with data fields (1D, 2D, 3D fields). Analysis of simple examples of solved tasks.	O3
10.	Midterm exam	
11.	Functions in programming. Basic characteristics of functions, declaration of functions, transfer of arguments, inline functions).	O4
12.	Vector - basic properties, functions of the Vector class. Analysis of simple examples of solved tasks.	O4
13.	Use of files. Basic operations for using text files. Analysis of simple examples of solved tasks.	O5
14.	Development of algorithms and more complex applications. Application of different data structures in solving problem tasks.	O5
15.	Midterm exam	