POLYTECHNIC OF MEĐIMURJE IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR: 2022/2023

1. GENERAL COURSE INFORMATION

1.1 Course name	**Computer architecture**			
1.2 Study program/s	**Undergraduate professional study of Computer Science**			
1.3 Course status (M,E)	**Mandatory**	**1.6 Mode of instruction (number of hours)**	**Lectures**	30
1.4 Course code	5014		**Exercises**	45
1.5 Course abbreviation	AR		**Seminars**	
1.6 Semester	III		**E-learning**	
1.7 ECTS	6	**1.7 Place and time of instruction**	Premises of the Polytechnic of Međimurje in Čakovec, according to the schedule published on the website	

2. TEACHING STAFF

2.1 Course leader/s-title	MSc. Željko Knok/ senior lecturer	**contact**	zknok@mev.hr
		contact	
2.2 Assistant/s- title		**contact**	
		contact	
2.3 Instruction held by- title	MSc. Željko Knok/ senior lecturer	**contact**	

3. COURSE DESCRIPTION

3.1 Course goals	The student should get acquainted with the components that make up the computer as a whole, different computer architecture, how to execute instructions and programming in machine code.
3.2 Prerequisites	To take the course, it is necessary to pass the courses Digital Electronic Circuits and Computer Applications
3.3 Course outcomes	After successfully completing the course, students will be able to: O1 - Explain the building blocks of the computer and the architecture of the Atmel Atmega328p microcontroller O2 - Draw the connection of digital inputs and outputs with a microcontroller O3 - Create an assembler program that uses input-output circuits and arithmetic logic operations O4 - Create a program in assembler that uses timing and interrupts
3.4 Course content	The course presents contents related to working with the database through objects, stored tasks, permissions and access controls. In the practical part, open source tools are used.

3.5 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								

3.6 Language of instruction	Croatian /English					
	1,00	Class attendance		Seminars		Essay

3.7 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)

1,00	Class activity		Project		Report/paper
2,00	Midterm exams	2,00	Practical task	1,00	Continuous knowledge check
	Written exam		Experimental work		
	Oral exam		Research		

3.8 Assessment and evaluation of students' work during classes and at the final exam

Activity specification	Percent %	Points
Assessment during instruction		
Attendance	5%	5
Class activity	5%	5
Seminar/ project/ essay	30%	30
Midterm exam 1	30%	30
Midterm exam 2	30%	30
Exam assessment for the students who failed to fullfil all the obligatory requirements during the semester		
Written exam	*60%*	*60*
Total:	**100%**	**100**

3.9 Assessment criteria – analysis per learning outcomes

Ways of evaluating learning outcomes						
	Attendance	**Activity**	**Mid-term exam 1**	**Mid-term exam 2**	**Practical work**	**Total**
Outcome 1			15		10	25
Outcome 2			15		5	20
Outcome 3				15	5	20
Outcome 4				15	10	25
Outcome not-related						10
Total	5	5	30	30	30	100

Grading of outcomes (in order to pass the mid-term exam/exam the student must achieve at least 50% points for each learning outcome)

Points	Grade
89 – 100	excellent (5)
76 – 88	very good (4)
63 – 75	good (3)
50 – 62	pass (2)
0 – 49	fail (1)

3.10 Specific features related with taking the course

If a student collects 50% of the points of each outcome, he / she directly takes the exam, provided that he / she has done practical work (exercises). A student cannot access the exam period if he / she has not achieved min. 60% correct answers. Practical work-exercises are made according to the instructions published on the Merlin system and are submitted by posting on the Merlin. Checking the completed exercises is done in the exercise classes after prior preparation with the teacher. During the semester, the student is required to perform five exercises independently. Practical work (completed exercises) is taught until the last week of lectures. During the exam, it is possible to orally check the knowledge from practical work (exercises).

If a student does not achieve a sufficient number of points on the midterm exam, he / she cannot take the next midterm exam.

Once achieved points in intermediate exams for each learning outcome are no longer deleted unless the student decides to correct the result for each learning

	outcome, whereby the points won until then are deleted and newly achieved points for that learning outcome are entered. The final grade is obtained on the exam period and is the sum of points earned during classes. Students who did not take the colloquium access the written part of the exam where all learning outcomes are checked, and are required to have completed exercises before taking the exam.	
3.11 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 online tuition, organised webinars and 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.	
3.12 Written assignments		
3.13 Required reading	1.	
	2.	
3.14 Additional reading		
	1.	Atmel Corporation : 8-bit AVR Microcontroller with 32K Bytes In-System Programmable Flash, San Jose , 2016
	2.	Atmel Corporation : AVR Instruction Set Manual, San Jose , 2016
4 ADDITIONAL COURSE INFORMATION		
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 Polytechnic of Međimurje in Čakovec.	
4.2 Contact the teacher	Students can contact the teacher during the office hours and during classes, while for short questions and explanations they can contact him/her any day during working hours by coming in person or by landline. 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 Polytechnic at least 24 hours in advance.	

4.4 Course contribution to the study program	Select the appropriate programming language and technology when solving programming tasks. Apply the acquired learning skills, basic knowledge of the profession and problem solving necessary for continuing studies at a higher level.