POLYTECHNIC OF MEĐIMURJE IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR:	2022/2023

1. GENERAL COURSE INFORMATION

1.1 Course name	Computer networks			
1.2 Study program/s	Undergraduate professional study of Computer Science			
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	RMR		Seminars	
1.6 Semester	4		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	Jurica Trstenjak/ senior lecturer	contact	jtrstenjak@mev.hr
		contact	
2.2 Assistant/s- title	Robert Poljak/ lecturer	contact	robert.poljak@mev.hr
		contact	
2.3 Instruction held by- title	Jurica Trstenjak/ Senior lecturer Robert Poljak/ lecturer	contact	

3. COURSE DESCRIPTION

3.1 Course goals	Introduction to the basic concepts, structure and principles of operation of computer networks and their components such as network devices, data transmission media and network protocols.
3.2 Prerequisites	No
3.3 Course outcomes	After completing the course assignments, students will be able to: O1. Explain the basic communication protocols and services by layers of the reference OSI model O2. Implement network traffic routing mechanisms in accordance with the requirements of the network topology O3. Apply subnetting techniques to a network topology O4. Implement protection and security in computer networks
3.4 Course content	Local Computer Networks:purpose, types, features, selection, application, configuration, cabling, advantages, disadvantages. Active devices: repeaters, routers. Wireless networks and home Wireless networks. Connecting computer equipment. Modems: types, limits, application, configuration. Data transfer to phone systems. Analog and digital telephony. ISDN. Mobile phones. Connections, applications, restrictions. Global computing networks: PSDN, ISO-OSI. Internet: organization, technology, protocols (TCP / IP, DNS, SMTP, FTP, Telnet, HTTP). Network services: mail, www. Security, risks and protection of computer networks.

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

3.6 Language of instruction	Croatian/English					
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)	2	Class attendance (L+E)		Seminars		Essay
		Class activity		Project	0,5	Report/paper
	3,5	Exams (midterm)		Practical task		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
Oral part of midterm	12%	12
Midterm exam 1	30%	30
Midterm exam 2	30%	30
Practical task	18%	18
Exam assessment for the students who failed to fullfil all the obligatory requirements during the semester		
Written exam	*60%*	*60*
Oral Exam	*12%*	*12*
Total:	**100%**	**100**

3.9 Assessment criteria – analysis per learning outcomes

Ways of evaluating learning outcomes							
	Atten dance	Acti vity	Oral part of midterm	Mid-term exam 1	Mid-term exam 2	Practi cal work	Total
Outcome 1			3	15		4	22
Outcome 2			3	15		4	22
Outcome 3			3		15	5	23
Outcome 4			3		15	5	23
Outcome not-related	5	5					10
Total	5	5	12	30	30	18	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

In order for a student to pass the course, he / she must earn a minimum of 50% of the points available for that learning outcome for EACH learning outcome. If a student does not achieve a sufficient number of points in the 1st midterm exam (minimum 50% of the total number of points), he / she cannot take the next midterm exam. Once earned in the midterm exams for each learning outcome is no longer deleted unless the student decides to correct the result for each learning outcome, whereby the points earned so far are deleted and newly earned 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 midterm exam take the written and oral part of the exam, where all learning outcomes are checked, and they are required to submit all homework before taking the exam. In order to start writing the midterm exam, the student must complete all previous homework assignments.
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. Tanenbaum, A.S.: Computer Networks, 5th Edition, Prentice Hall 2011.
	2.
3.14 Additional reading	1.
	2.

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	Apply the acquired learning skills, basic knowledge of the profession and problem solving necessary for continuing studies at a higher level. Use English in the domain of ICT in communication with experts and lay people. Distinguish types and communication protocols of computer networks. Use tools and methods to plan, build and maintain computer networks based on wired or wireless communication media. Analyze user needs (research and detect data sources, currently present business systems, technological limitations, specifics of the business environment)

	Apply standards, methods and techniques to analyze security threats and combat threats