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	Computer networks			
1.2 Study program/s	UNDERGRADUATE PROFESSIONAL STUDY PROGAMME 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	IV		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	Jurica Trstenjak, senior lecturer	contact	jtrstenjak@mev.hr
		contact	
2.2 Assistant/s- title		contact	
		contact	
2.3 Instruction held by-title	Jurica Trstenjak, senior lecturer	contact	jtrstenjak@mev.hr
2.4 Course leader/s-title		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 successfully completing the course, 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 Contribution of the course 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.
3.5 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.									

3.6 Types of coursework	x	Lectures	X	Exercises	x	Blended e-learning	X	Individual activities	x	Laboratory
		Seminars and workshops		Distant learning	X	Field classes	x	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
	3	Midterm exams/written exam		Project		Essay
	0,5	Oral exam	0,5	Practical task		

Activity specification	Percent %	Points
Assessment during instruction		
Lesson assignments	10%	10
Midterm exam 1	30%	30
Midterm exam 2	30%	30
Oral exam	15%	15
Practical task	15%	15
Exam assessment for the students who failed to fullfil all the obligatory requirements during the semester		
Written exam	60%	60
Oral exam	15%	15
Total:	**100%**	**100**

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

3.9 Specific features related to taking the course	*If a student collects 50% of the points of each outcome he/she directly accesses the oral exam. If a student does not achieve a sufficient number of points on the midterm exam, he/she cannot take the next midterm exam, and has to take the written exam.* *If he/she passes the written exam, he/she will proceed to the oral part of the exam.* *The seminar paper is submitted within the agreed deadline, and certainly before the exam term.* *The final grade is given on the oral part of the exam.*
3.10 Students obligations	• 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		Tanenbaum, A.S.: Computer Networks, 5th Edition, Prentice Hall 2011.
3.13 Additional reading		

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.	Introductory class (Computer networks)	O1
2.	The physical layer of the OSI model	O1
3.	The physical layer of the OSI model	O1
4.	The data layer of the OSI model	O1
5.	The data layer of the OSI model	O1
6.	The network layer of the OSI model	O2,O3
7.	The network layer of the OSI model	O2,O3
8.	1st midterm exam	
9.	The transport layer of the OSI model	O1,O2,O3
10.	The transport layer of the OSI model	O1,O2,O3
11.	Session layer and presentation layer	O1, O4
12.	The application layer of the OSI model	O1, O4
13.	The application layer of the OSI model	O1, O4
14.	Security of computer networks	O4
15.	2nd midterm exam + oral part	