<table>
<tr><td>NAME OF THE COURSE</td><td colspan="5">Practicum of computer networks</td></tr>
<tr><td>Code</td><td>PMIC31</td><td>Year of study</td><td colspan="3">GU-2
UGU-2</td></tr>
<tr><td>Course teacher</td><td>prof.dr. sc. Marko Rosić</td><td>Credits (ECTS)</td><td colspan="3">2,0</td></tr>
<tr><td rowspan="2">Associate teachers</td><td rowspan="2"></td><td rowspan="2">Type of instruction (number of hours)</td><td>L</td><td>S</td><td>E</td><td>F</td></tr>
<tr><td></td><td></td><td>30</td><td></td></tr>
<tr><td>Status of the course</td><td></td><td>Percentage of application of e-learning</td><td colspan="3"></td></tr>
<tr><td colspan="6">COURSE DESCRIPTION</td></tr>
<tr><td>Course objectives</td><td colspan="5">The aim of the course is to teach students theoretical and practical basics of computer networks, network protocols, TCP / IP model and LAN architecture. Introduction to basic components such as network devices, media for data transfer and network protocols.
Students should acquire practical knowledge for managing devices for design and analysis of different types of local networks.</td></tr>
<tr><td>Course enrolment requirements and entry competences required for the course</td><td colspan="5">• Completed course Computer Network (79285)</td></tr>
<tr><td>Learning outcomes expected at the level of the course (4 to 10 learning outcomes)</td><td colspan="5">1. simple network design using network devices.
2. the basic data analyze for the selected network protocols capturing packets in real time.
3. network design with the help of various software tools and display features the same network by changing the settings for different devices and protocols.
4. process and expose other students a protocol with basic features. A special emphasis on the pros and cons.</td></tr>
<tr><td>Course content broken down in detail by weekly class schedule (syllabus)</td><td colspan="5">laboratory exercise (30 hours):
• Introduction to the application support for exercise– 2 hours
• Connecting to different types of devices and the creation of simple networks– 6 hours
Packet capturing and analysis packages for different types of protocol
• DNS, UDP, TCP – 2 hours
• ARP, ICMP – 2 hours
• IPv4, IPv6 – 2 hours
• HTTP, HTTPS – 2 hours
• DHCPv4, DHCPv6 – 2 hours
• WLAN – 2 hours
• NAT – 2 hours
• POP, IMAP – 2 hours
• VPN/IPsec– 2 hours
Software tools for visual modeling, analysis and data protocols, detection errors and shortcomings network settings.
• Ethernet LAN – 2 hours
• VPN/IPsec– 2 hours</td></tr>
<tr><td>Format of instruction</td><td colspan="2">☐ lectures
☒ seminars and workshops
☐ exercises
☐ on line in entirety
☐ partial e-learning
☐ field work</td><td colspan="3">☐ independent assignments
☐ multimedia
☒ laboratory
☒ work with mentor
☐ homework assignments</td></tr>
</table>

Student responsibilities	• Completed laboratory exercise. • self-contained presentation .

Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*

Name	Ects	Name	Ects	Name	Ects
Class attendance	1	Research		Experimental work	
Oral exam		Report		Homework assignments	
Seminar essay	1	Essay			
Tests		Practical training			
Written exam		Project			

Grading and evaluating student work in class and at the final exam	• The seminar work.

Required literature (available in the library and via other media)

Title	Number of copies in the library	Availability via other media
A.S.Tanenbaum, "Computer Networks", 5th Ed., Prentice-Hall, 2011	0	
L.Peterson, B.Davie, "Computer Networks: A Systems Approach", 4th Ed., Morgan Kaufmann Publishers, 2007	0	
L. Maleš, Skripa “Računalne mreže”, Fakultet prirodoslovno-matematičkih znanosti i odgojnih područja, 2004.	0	

Optional literature (at the time of submission of study programme proposal)	• Cisco Systems, Internetworking Technologies Handbook 2004. Elizabeth D. Zwicky, Simon Cooper & D. Brent Chapman, Building Internet Firewalls 2nd Edition 2000.
Quality assurance methods that ensure the acquisition of exit competences	• Consultations in the preparation of a seminar paper.
Other (as the proposer wishes to add)	• Prepare students for independent exercises and demonstration to other students.