



SYLLABUS

Basic information of the course	
University:	University “Ukshin Hoti” - Prizren
Academic unit:	Faculty of Computer Science
Study program:	Information Technologies and Telecommunication
Course:	Advanced IP and Networking Technologies
Study level:	Bachelor
Course status:	Mandatory
Study year:	3
Number of hours per week:	2+2
Credit value - ECTS:	6
Time / location:	It will be published in the university web site!
Lecturers:	Prof. Asoc. Dr. Malush Mjaku
Contact details:	malush.mjaku@uni-prizren.com
Course description:	<p>Through this course, the student is able to research information using different techniques and strategies, to evaluate that information using the necessary filters, as well as to use it in a scientific work. This course develops students' capacities to write a scientific paper, developing the skills of searching, evaluating and using information efficiently and effectively. At the same time, the course develops the student's skills to communicate information effectively using appropriate communication tools.</p>
Course objectives:	<p>The course is designed to provide theoretical knowledge and hands-on experience in modern (advanced) computer network technologies. The material includes networking and protocol terminology, networking standards, TCP / IP modeling, routers, bridges, gateways. Then with the OSI reference model (ac. Eng. Open Systems Interconnection, OSI). Particular importance will be given to problem solving and decision making techniques when troubleshooting networks, network and internet architecture, BGP, IP, IPv4, IPv6, MPLS, VoIP and QoS notions.</p>

Learning outcomes:	Upon completion of the course, the student will be able to: <ul style="list-style-type: none"> - Have basic knowledge of the protocol and service layers, - Have basic knowledge of TCP / IP protocols, - Be able to apply the protocols, - Be able to configure networks, - Have basic knowledge of applications distributed over networks, - Be able to manage and manage networks, and Understand applications based on TCP / IP protocols. 		
Contribution on student load (must correspond with learning outcomes)			
Activity	Hours	Days/week	Total/hours
Lectures	2	15	30
Exercise theoretical/laboratory	2	15	30
Practice work	-	-	-
Contact with lecturer/consultations	1	15	15
Field exercises	-	-	-
Midterms	2	2	4
Laboratory exercises	2	15	30
Individual time spent studying (at the library or home)			
Final preparation for the exam	2	8	16
Time spent in evaluation (tests, quiz, final exam)	2	2	4
Projects, presentations, etc.	1	1	1
Total			150
Notice: 1 ECTS credits = 25 hours commitment, e.g. if the course has 6 ECTS credits student must have 150 hours during the semester.			
Teaching methods:	The course is a combination of lectures, discussions, numerical and laboratory exercises, while the assignments are presented by the laboratory course lecturers!		
Assessment methods:	<ul style="list-style-type: none"> - Attendance of the lectures and activity: 10%. - First Midterm: 35%. - Second Midterm: 35%. - Seminar Paper: 20%. 		
Assessment and grading:	Vlerësimi në %	Nota përfundimtare	
	91% - 100%	10	

	81% - 90%	9
	71% - 80%	8
	61% - 70%	7
	51% - 60%	6
	0% - 50%	5
Literature		
Basic literature:	<ol style="list-style-type: none"> 1. James F.Kurose & Keith W. Ross, Computer Networking. 2. M. Mjaku, Ligjërata të autorizuar nga lënda: Teknologji e avansuar e IP-ve dhe rrjetave. 	
Additional literature:	1.	
Study plan		
Week	Lectures	
<i>First week:</i>	<ul style="list-style-type: none"> • Introduction (Course Presentation and Student Assessment Policy, Network Component of Telecommunications Systems (Telecommunications, Telematics)) 	
<i>Second week:</i>	<ul style="list-style-type: none"> • Development of computer networks. 	
<i>Third week:</i>	<ul style="list-style-type: none"> • Computer network architecture. 	
<i>Fourth week:</i>	<ul style="list-style-type: none"> • Computer networking, modes of data transmission. 	
<i>Fifth week:</i>	<ul style="list-style-type: none"> • Types of computer networks (PAN, LAN, MAN, WAN, Internet). 	
<i>Sixth week:</i>	<ul style="list-style-type: none"> • Standardization of data transmission over networks, OSI Reference Model, TCP / IP. 	
<i>Seventh week:</i>	<ul style="list-style-type: none"> • Internet, Website Development. 	
<i>Eighth week:</i>	<ul style="list-style-type: none"> • Standard Internet services (FTP, E-mail, POP, SMTP, WEB). 	
<i>Ninth week:</i>	<ul style="list-style-type: none"> • Wireless Internet Access, Mobile Telephony, WAP, Intranet and Extranet. 	
<i>Tenth week:</i>	<ul style="list-style-type: none"> • Protocol, Internet Protocol (IP). 	
<i>Eleventh week:</i>	<ul style="list-style-type: none"> • Internet Protocol version 4 (IPv4). 	
<i>Twelfth week:</i>	<ul style="list-style-type: none"> • Internet Protocol version 6 (IPv6). 	
<i>Thirteenth week:</i>	<ul style="list-style-type: none"> • IPv6 packages, IPv6 addressing, IPv6 Compatibility with IPv4. 	
<i>Fourteenth week:</i>	<ul style="list-style-type: none"> • Transmission of calls over IP-based computer networks, VoIP (Internet telephony, voice over IP). 	
<i>Fifteenth week:</i>	<ul style="list-style-type: none"> • QoS (The Quality of Service plan). 	

Exercises

Study plan	
Java	Exercises
<i>First week:</i>	<ul style="list-style-type: none"> • Distribution of the homework topics.
<i>Second week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the first week lecture.
<i>Third week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the second week lecture.
<i>Fourth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the third week lecture.
<i>Fifth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the fourth week lecture.
<i>Sixth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the fifth week lecture.
<i>Seventh week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the sixth week lecture.
<i>Eighth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the seventh week lecture.
<i>Ninth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the eighth week lecture.
<i>Tenth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the ninth week lecture.
<i>Eleventh week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the tenth week lecture.
<i>Twelfth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the eleventh week lecture.
<i>Thirteenth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the twelfth week lecture.
<i>Fourteenth week:</i>	<ul style="list-style-type: none"> • Quizzes and case studies related to the topic of the thirteenth week lecture.
<i>Fifteenth week:</i>	<ul style="list-style-type: none"> • Presentation of the semester projects.

Academic policies and rules of conduct
<ul style="list-style-type: none"> • Generally lecture presentations will be made through MS PowerPoint, tables, material usage, computer programs and numeric exercises. • Additional resources (scientific papers, publications, national bulletins, as well as recent discoveries and research) will be provided by professors. • In the absence of the opportunity for practical work to be organized weekly, in cooperation with the management of the university, this activity will be organized on certain days in: organizations, companies, etc. • During each session will be organized the conversation and co-participation with the students!

- Students are required to be regular in lectures and exercises!
- It will be evaluated when the students collaborate and participate in the lectures and course exercises!
- Timely arrival in lectures and exercises is mandatory!