



Меѓународен Универзитет Визион - International Vision University
Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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DERS İZLENESİ (SYLLABUS)

COURSE NAME	COURSE CODE	SEMESTER	COURSE LOAD	ECTS
COMPUTING TOOLS IN ENGINEERING	4022	4	180	6

Prerequisite(s)	None
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Course Language	Turkish
Course Type	Elective
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra Curricular Office Hours and Location	

Course Objectives	The goal of this course is to familiarize students with the concepts of data communication, computer networks, and Internetworking. At the end of this course, students will be able to understand the principles of computer networking, including protocol features, protocol layering, addressing, routing, and basic network security issues. Students will be able to enumerate the architectural structures of the ISO/OSI and TCP/IP and explain functions of each layer. TCP/IP layers and their network traffic will be analyzed using dedicated tools such as TCPDUMP and Wireshark. Client-server programs will be developed by using C/C++ socket library. All laboratory assignments and experiments will be performed on the UNIX platform.
Course Learning Outcomes	The students who succeeded in this course; Will be able to examine and evaluate the structure and functionality of network protocols Describe and get familiar with the structure and functionality of the Data Link Layer and MAC Examine the concept of the Network Layer, design local area networks (LAN), comprehend IP addressing scheme, examine and design subnetworks, Will be able to examine Routing Algorithms and analyze routing information exchange, Will comprehend the functionality of the Transport Layer and TCP/IP protocol stack. Students will also be able to monitor and decode the contents of the TCP/ IP stack using packet analysis tools.
Course Contents	To acquaint students with major communication protocols, their features, details, and functionality and to introduce students to the literature and terminology,

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1	Introduction to Computer Networks. Tools, techniques and methodologies used in analyzing and implementing computer networks	Related Chapters of Course Sources
2	Data Link Layer: Multiple Access Protocols	Related Chapters of Course Sources
3	Medium Access Control (MAC) Protocols, Contention and Collision- free protocols	Related Chapters of Course Sources
4	Data Link Layer: Error-detection and Correction, Link-Layer Addressing ARP,RARP	Related Chapters of Course Sources
5	Transport Layer: Connection-oriented and Connectionless networking. TCP and UDP protocols	Related Chapters of Course Sources
6	Error control, flow control, error detection and correction	Related Chapters of Course Sources
7	Mid-term Exam	Related Chapters of Course Sources
8	Wireless and Mobile Networks	Related Chapters of Course Sources
9	Network Layer, IPv4 Addressing. Subnetworking, ICMP, NAT, Dynamic Addressing BOOTP, DHCP	Related Chapters of Course Sources
10	Routing algorithms	Related Chapters of Course Sources
11	Routing Information Exchange	Related Chapters of Course Sources
12	Application Layer: Socket programming, Connection-oriented and Connectionless client-server programming	Related Chapters of Course Sources
13	Basic Network Security	Related Chapters of Course Sources
14	Review of the Semester	Related Chapters of Course Sources
15	Final Exam	Related Chapters of Course Sources

ECTS / WORKLOAD TABLE

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
Total Work Load			
ECTS	6		

GENERAL PRINCIPLE RELATED WITH COURSE

Dear students,

You need to be included in the flow, please follow the course of learning and using that to achieve our success you deserve, you need to practice every day on topics that are covered by the course. It takes practice reading basic and auxiliary literature that is strictly recommended. You should visit classes course I need to make an effort to visit all the professors' lectures. Your activity on the session will be assessed by your professors and the Battle active participant in the discussions that will take place during the time. Students visiting lectures for all at the end if an additional 15 points.

SOURCES

COMPULSORY LITERATURE		
No	Name of the book	Author's Name, Publishing house, Publication Year
1	Bilgisayar Ağları ve İletişim	Abdullah Kuzu, Nobel Akademik Yayıncılık
2		
3	Computer Networking: A Top Down Approach Featuring Internet	James Kurose, AddisonWesley,

ADDITIONAL LITERATURE		
No	Name of the book	Author's Name, Publishing house, Publication Year
1		
2		
3	Computer Networks And Internets	Douglas E. Comer, 2009. Prentice Hall

EVALUATION SYSTEM

Underlying the Assessment Studies	NUMBER	PERCENTAGE OF GRADE
Attendance/Participation	15	% 10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
TOTAL	17	%100

ETHICAL CODE OF THE UNIVERSITY

In case students are cheating on exams or preparation the same, it is not making reference to the source to be used in studies, as for example in assignments, projects and presentation (plagiarism), in accordance with legislations by Ministry of Education and Science of the Republic of Macedonia and International Vision University, apply relevant disciplinary rules. International Vision University students are expected never attempts in this kind of behavior.