

Khazar University

School of Engineering and Applied Sciences

Identification

Subject:	Advanced Computer Networks (CMS 521)
Department:	Computer Science
Instructor:	Saxavat Talibov
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Office hours:	Monday to Saturday, 10:00 am to 5 pm
Term:	Spring, 2010

Prerequisites

Networking and Communications (CMS 309),
Data Structures and Algorithms (CMS 218)

Textbooks and Materials:

Core Textbooks:

1. Ethernet Networks: Design, Implementation, Operation, Management. Gilbert Held, 2006
2. James F. Kurose and Keith W. Ross , Computer Networking - A Top-Down Approach Featuring the Internet, 5th Edition , 2009 Addison Wesley
3. Mobile Inter-networking with IPv6 : Concepts, Principles and Practices. [Rajeev S. Koodli](#), [Charles E. Perkins](#)
4. <http://dSPACE.dsto.defence.gov.au/dSPACE/bitstream/1947/4319/1/DSTO-TR-1039.pdf>
5. IP convergence in global telecommunications - Voice over Internet Protocol (VoIP) (2000) [Zahorujko, I.](#) [Reynolds, A.](#), [Blair, B.](#)

Supplementary:

For class presentations and discussions, the students should utilize the Newspaper, Journal and Internet materials. Moreover, the course does not limit the use of learning materials available at Khazar University library.

Objectives

This course is designed for the students of school Engineering and computer sciences of Khazar University.

Developed Skills

Throughout the course the students should develop and maintain the following skills:

- Analytical thinking
- Critical reasoning
- Team building and management
- Leadership
- Presentation
- Other...

Evaluation

Lab. works:	20%
Mid-term Examination:	25%
Participation and activity	10%
Project	10%
Final Examination:	35%
Total:	100%

Learning and Teaching Methods

This course considers active learning process rather than passive one. Lectures, discussions, practice, typing.

Weekly Schedule

No. of week	Subject Name	Hours		Readings
		Lect	Lab	
1-2	Introduction to Networking Concepts	4	4	Chap. 1[1]
3-4	Networking Hardware and Software	4	4	Chap.5[1]
5	Ethernet Networks.	2	2	Chap. 3[1]
6	Frame Operations	2	2	Chap. 4[1]
7	Bridging and Switching Methods and Performance Issues	2		Chap. 6[1]
8	Midterm Exam			
	Networking Standards. Open systems interconnect (OSI). Network protocols.	2	2	Chap. 2[1]
9	Routers	2	2	Chap. 7[1]
10	Wireless Ethernet	2	2	Chap. 8[1]
11	Security	2	2	Chap. 9[1]
12	Managing the Network	2	2	Chap. 10[1]
13	The Future of Ethernet.	2	2	Chap. 11[1]
14	The Client-Server Networking. The peer-to peer Networking	2	2	Chap. 3[8]
15	IPv6 Internetworking and Mobility. Internetworking with IPv6; IPv6 extensions and functionality. Routing advances.	2	2	[3]
16	IP Convergence and QoS. Service integration and Quality of Service (QoS) in IP networks. Service contracts. Services specification, configuration and management.	2	2	[4-5]
17	Final exam			