K h a z a r U n i v e r s i t y

School of Engineering and Applied Sciences

Identification

Subject:	**Computer Networks and Communications (CMS 309)**
Department:	Computer Science
Instructor:	Saxavat Talibov
Office:	#402
Phone:	+99412 219310
E-mail:	**stalibov**@khazar.org, saxavat@yahoo.com
Office hours:	Monday to Saturday, 10:00 am to 5 pm
Term:	Spring, 2010

Prerequisites

Data Structures and Algorithms (CMS 218)

Textbooks and Materials:

Core Textbooks:

1. Nader F. Mir, Computer and Communication Networks. Prentice Hall. 2006
2. James F. Kurose and Keith W. Ross , Computer Networking - A Top-Down Approach Featuring the Internet, 5th Edition , 2009 Addison Wesley
3. Emilio Ramos/ Al Schroeder. Contemporary data communications.
4. Gilbert Held. Ethernet Networks, 2006
5. Andrew S. Tanenbaum, Computer Networks, Fourth Edition. Prentice Hall, 2003
6. William Stallings, "Data and Computer Communications", 5th Edition, PHI, 1997

Supplementary:

7. Сухов А.Н. Локалные вычислительные сети в системах обработки данных и управлению. Москва 1991
8. С. И. Самойленко. Сети ЭВМ. Наука, 1986
9. www.oszone.net\windows\win2003\1.shtml.htm
10. http://www.gwc.maricopa.edu/class/mst140/
11. Behrouz A. Forouzan, TCP/IP Protocol Suite, McGraw Hill (ISBN:0-07-246060-1)
12. Internet RFCs - by ITEF (The Internet Engineering Task Force)

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 data processing systems. Networking	4	4	Chap. 1[2], 1[7]
3-4	Teleprocessing. Terminal systems. Local area Networks.	4	4	Chap.2[3]
5	Hardware and software of networks. **Protocols: BSC, HDLC,**	2	2	Chap. **3[1], 1** [7]
6	Building a network – Requirements – Network Architecture – OSI – Internet – Direct Link Networks – Hardware building blocks – Framing – Error detection – Reliable transmission.	2	2	Chap. 2[1], 1[2]
7	Communication media	2	2	Chap. 1[2], 2[7]
8	LAN Technology – LAN Architecture – BUS/Tree – Ring – Star – Ethernet – Token Rings – Wireless	2		Chap. 1[2], 5[1]
	Midterm Exam			
9	International standards. Open systems interconnect (OSI). Network protocols.	2	2	Chap. 2[1], 2[8]
10	7 layer model. Logical and physical structure of networks.	2	2	Chap. 2[2] , [8]
11	Structure of transport link. The physical link control. The information link control	2	2	Chap. 2[2] , [8]
12	Structure of a transport Network Processes. 3 upper layers TRANSPORT LAYER - Reliable Byte Stream (TCP) – Simple Demultiplexer (UDP) – TCP Congestion Control – Congestion Avoidance Mechanisms	2	2	Chap. 3[2]
13	NETWORK LAYER Packet Switching – Switching and Forwarding – Bridges and LAN switches – Internetworking – Simple Internetworking – Routing Introduction to Ethernet and Netware	2	2	Chap. 4[2]
14	PRESENTATION LAYER and APPLICATIONS Presentation formatting – Data compression – Cryptographic Algorithms: RSA - DES — Applications – Domain Name Service – Email - SMTP – MIME – HTTP – SNMP.	2	2	Chap. 2[5], [7]
15	The Client-Server Networking. The peer-to peer Networking	2	2	Chap. 3[8]
16	The Novell Netware v.4.X and v.5.x, Microsoft Windows-2008. Microsoft Windows-XP ,Windows . Networking. Introduction to Internet. World Wide Web.	2	2	Chap. 4[8]
17	Final exam			