Jadara University

Faculty: **Science and Information Technology**

Department : **Computer Networks**

(Course Syllabus)

CourseTitle	*Credit Hours*	*Course No.*	*Prerequisite*	*Year (semester)*	*Lec./Lab. Credit*
Computer networks 1	**3**	**502251**	**Data communication**	**2015-2016(1)**	**Lecture: 3 Lab : 0**

Coordinator Name	*Lecturer*	*Room No.*	*E-mail*	*Office Hours*
Arwa zabian	*Arwa zabian*	**B 405**	**arwa@jadara.edu.jo**	**Sun-tue-thu 10-11**

Course Description:

This course introduces the basic concepts of the computer networks, and gives a definition of the protocols of the stack TCP/IP. It allows the student to have a clear understanding of what happens from the moment in which the user open the browser, ask about Internet services (web, e-mail,….) until receiving the requested service. The course concentrates on studying the network layer and the data link layer. What are the components of the router and how switching is done inside the router, the routing algorithms (static and dynamic routing). How packets is fragmented in data link layer and which types of errors happens in data communication in networks and how are detected and corrected

Intended Learning Outcomes :

Successful completion of this course should lead to the following learning outcomes :

A- Knowledge and Understanding : in this course the student will learn

1. The basic components of networks
2. how data is rooted between two hosts on the network
3. what are the causes of congestion in network and how we can avoid it.

B- Intellectual Skills:

How to simulate a real network

C- Subject Specific Skills:

How dividing the IP addresses in a network

Grade Distribution :

Assessment	Grade	Date
- First Exam	20 %	Week 6,7
- Second Exam	20%	Week 12
- Assignments (Reports /Quizzes/ Seminar / Tutorials ….)	10%	
- Final Examination	50%	Week 14

* No Make up for quizes are given under any condition. On time attendance of classes is required.

Course Contents :

Course Content		
Weeks	**Topics**	**Chapter in Text**
1	**Introduction to data communication :** Data communication components, data representation, data flow, network criteria (performance, reliability, security). Physical structure of network.	**Chapter 1 from textbook 2**
2,3	**Internet components:** TDM(Time Division Multiplexing), FDM (Frequency Division Multiplexing), Packet switching and delays, circuit switching. Internet protocols and stack layers	Chapter 2 , text book 1
4,5	**Application layer** • Principles of network applications, HTTP , FTP, SMTP, DNS	Chapter 2 , text book 1
*6,7	**Transport layer** Multiplexing, De-multiplexing. An overview of TCP and UDP	Chapter 3 from textbook1
8,9,10,11	**Network layer** Router components , routing criteria, IPV4, IPV6 , NAT, ARP, DHCP, ICMP and error reporting . Ping, debugging tools	Chapter 4 text book 1 And chapter 19,20,21 from text book 2
*12, 13,14	**Routing Algorithms:** **Link state , distance vector**	Chapter 22,23 Text book 2

Course quality improvement :

- From the market and new subjects in the field.
- From the monitoring of students feedback (Evaluation sheet).

Reading List:

Text Book	[1] **Computer Networking: A Top Down Approach Featuring the Internet. James F. Kurose- Keith W. Ross.** Pearson Education. 2013 . Sixth edition .ISBN:978-0-13-285620-1 [2] **Data Communications and Networking** **Behrouz A. Forouzan**. McGraw- Hill International Edition. Fifth edition 2012 . ISBN:978-0073376226

*Last updated on **12/10/2015** by* **: Dr. Arwa Zabian**