



Philadelphia University
Faculty of Information Technology
Department of Computer Information Systems
First semester, 2010/2011

<u>Course Syllabus</u>	
Course Title: Fundamentals of Computer Networks	Course code: 761340
Course Level: 3	Course prerequisite (s) : 721221
Lecture Time: 1- 1:10-2:00 2- 2:15-3:45	Credit hours: 3 Hours

<u>Academic Staff Specifics</u>				
Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Mohammad Taye	Assistant Professor	IT 7. 323	Sundays, Tuesdays, Thursdays 11:30 -13:00	mtaye@philadelphia.edu.jo

Course/ module description:

This course covers technical and managerial aspects related to data communication, computer and telecommunication networks.

Course /module objectives:

This course aims to provide:

- A solid understanding of data communications and networking principles including networking and telecommunications technologies, hardware and software.
- A basic knowledge and skills on telecommunication networks management, network security, cost-benefit analysis and evaluation of connectivity options.

Course/ module components:

- **Books (title , author (s), publisher, year of publication)**

1. Data Communication and Computer Networks: A business user's approach, Curt M. White, Boston/Thomson, 2009.

2. Business Data Networks and Telecommunication, Raymond R. Panko, Prentice Hall, 2003.

- **Support material (s):** Textbook Slides

Teaching methods:

Duration: 16 weeks totalizing 60 hours

- Lectures: 40 hours
- Tutorials: 8 hours
- Laboratory: 12 hours

Learning outcomes:

A student completing this module should be able to:

- **Knowledge and understanding**
 - *Understand a wide range of principles and techniques related to data communications, computer networks and telecommunication.(A)*
 - *Understand the professional and ethical responsibilities of the practising computer professional including understanding the need for quality.(A)*
 - *Understand the application of computer networking in a business context (A)*
- **Cognitive skills (thinking and analysis).**
 - *Evaluate, select, and implement different communication options within an organization.(B)*
- **Communication skills (personal and academic).**
 - *Plan and undertake a major individual project, and prepare and deliver coherent and structured verbal and written technical report. (C)*
 - *Be able to display an integrated approach to the deployment of communication skills, use IT skills and display mature computer literacy, strike the balance between self-reliance and seeking help when necessary in new situations, and display personal responsibility by working to multiple in complex activities.(C).*
- **Practical and subject specific skills (Transferable Skills).**
 - *Install and configure LAN switches, routers, firewalls*

Assessment instruments

- Home works: 01 report writing, 01 small LAN design project
- Final examination:

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	15%
Second examination	15%
Final examination:	50%
Assignment (5%), Lab (15%)	20%
Total	100%

** Make-up exams will be offered for valid reasons only with consent of the Dean.
Make-up exams may be different from regular exams in content and format.*

Academic Honesty

• Protection by Copyright

1. Coursework, laboratory exercises, reports, and essays submitted for assessment must be your own work, unless in the case of group projects a joint effort is expected and is indicated as such.
2. Use of quotations or data from the work of others is entirely acceptable, and is often very valuable provided that the source of the quotation or data is given. Failure to provide a source or put quotation marks around material that is taken from elsewhere gives the appearance that the comments are ostensibly your own. When quoting word-for-word from the work of another person quotation marks or indenting (setting the quotation in from the margin) must be used and the source of the quoted material must be acknowledged.
3. Sources of quotations used should be listed in full in a bibliography at the end of your piece of work.

• Avoiding Plagiarism.

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.
2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.
3. Direct quotations from an earlier piece of your own work, if not attributed, suggest that your work is original, when in fact it is not. The direct copying of one's own writings qualifies as plagiarism if the fact that the work has been or is to be presented elsewhere is not acknowledged.
4. Plagiarism is a serious offence and will always result in imposition of a penalty. In deciding upon the penalty the Department will take into account factors such as the year of study, the extent and proportion of the work that has been plagiarized, and the apparent intent of the student. The penalties that can be imposed range from a minimum of a zero mark for the work (without allowing resubmission) through caution to disciplinary measures (such as suspension or expulsion).

Course/module academic calendar

Week	Basic and support material to be covered	Main Concept
(1)	Introduction to computer networks	Networked Applications Categories of Networks
(2)	Fundamentals of data and signals	1) Signal, data concepts 2) Baseband and broadband transmission 3) Noise
(3) (4)	Transmission Medium The Media – Conducted and Wireless	1) Guided medium (wire) 2) Unguided medium (wireless) 3) Making Connections 4) Cabling
(5)	Network Architectures	1) Concepts of communication layers, protocols, services. 2) OSI 3) TCP/IP
(6) (7) (8)	Local Area Networks	1) Basic Network Topologies 2) Wireless Topology 3) Contention-Based Protocols 4) LAN sublayers 5) LAN Frame structures 6) Network connectivity Devices: hub, bridge, switch
(9) (10)	Metropolitan and Wide Area Networks	1) Packet Switching Network 2) Types of Network Structures 3) Routing/congestion 4) Examples of WAN technologies: Frame relay, ATM.
(11) (12)	Internetworking	1) IP layer 2) IP Addressing 3) IP Subnetting 4) IP Routing
(13) (14)	Data Link layer: Framing, Error control techniques, flow control techniques Multiplexing Techniques.	
(15) (16)	Overview on Network Management;	

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module References

Books

1. Business Data communications, William Stallings, Prentice Hall, 2005.
2. Data Communication and Network, Dave Miller, McGraw Hill, 2006.
2. Business Data communications, Stamper, David. A, Prentice Hall, 2003.
3. Business Data Communications, Forouzan, Behruz. A Fegan, Sophia Chung, McGraw Hill, 2007.
4. Computer Networks and internets: with Internet Applications, Comer Douglas E, Upper Saddle River, 2004.
5. Business Data Communications and Networking, Jerry Fitzgerald, Alan Dennis, 7th edition, 2002.
6. Computer Networking: a top-down approach featuring Internet, Kurose James F, Ross Keith W, Addison Wesley, 2007.
7. Data Communication and Computer Networks, Gupta Prakash, Prentice Hall, 2006.
8. Computer Communication and Network technologies, Gallo Michael A, Hancock William M, Pacific Group, 2001.
9. Communication Networks: Principles and Practice, Hasera Sumit, Narang Nishit, Narang Sumita, McGraw Hill, 2005.