Philadelphia University
Faculty of Administrative & Financial Sciences
Department of Business Networking and Systems Management

Course Syllabus	
Course Title Computer Networks(I)	**Course code: 0371224**
Course Level: Second year	**Course prerequisite: 0371120**
Lecture Time:	**Credit hours: 3**

Academic Staff Specifics				
Name	**Rank**	**Office Number and Location**	**Office Hours**	**E-mail Address**
Mr. Ahmad Al-Ghoul	M.Sc.	32404		ahmad4_2_69@hotmail.com

Course module description:

The aim of this course is to give a student A comprehensive coverage of the materials related to TCP/IP suite where all basic protocols are discussed (IP, TCP, ARP, RARP, ICMP, DHCP, etc.).Moreover, the functions of networking devices in network design are also discussed. Cisco devices programming represents a crucial part of the course where the student is get acquainted with the basic commands that are used to program these devices, And how to create and distribute subnets.

Course module objectives:

Introducing the student to the fundamental design aspects of a modern computer network/Internetwork is the primary objective of this course. This shall, in turn, involve:
· Developing an understanding of futures techniques and approaches, including their limitations and applications.
· Study of system/application design issues in building good networks/internetworks.
· Understanding of design trade-offs required for building robust, economical and efficient networks.
· Study of how to program the networking devices to meet the required networking operation.

Course/ module components

- **Books**

CCNA: Study Guide (7 th edition).
Todd Lammle
Sybex Inc.,
ISBN: 978-0-470-90107-6

- **Support material(s).**
- Study guide(s) (if applicable)
- Homework and laboratory guide(s) if (applicable).
Teaching methods:
Lectures, tutorials, problem solving, and computer aided design and simulation.

Learning outcomes:
A student completing this module will get acquainted with:
- Cisco Internetwork Operating System (IOS) Fundamental.
- The OSI Reference Model and Layered Communication.
- Bridges/Switches and LAN design.
- Network Protocols.
- Subnetting.
- Routing.
- Wide Area Networks.

- Cognitive skills (thinking and analysis).
➢ **Be able to understand different available architectures of intelligent systems.**

- Communication skills (personal and academic).
➢ **None**

- Practical and subject specific skills (Transferable Skills).
➢ **The student is able to design Local area networks using necessary networking devices.**
➢ **The use of Cisco simulator tool will help the student in building a network model and at same time be able to program the devices used in order to test the operation of the network.**

Assessment instruments
- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 50 marks

Allocation of Marks	
Assessment Instruments	**Mark**
First examination	**20**
Second examination	**20**
Final examination: 50 marks	**40**
Reports, research projects, Quizzes, Home works, Projects	**20**
Total	**100**

Documentation and academic honesty

This course is given from the textbook mentioned above. It is copyright protected. Students are encouraged to purchase this textbook from the university bookshop.

Definition of Plagiarism
Plagiarism is the unacknowledged borrowing of another writer's words or ideas.

How Can Students Avoid Plagiarism?

To avoid plagiarism, you must give credit whenever you use

- another person's idea, opinion, or theory;
- any facts, statistics, graphs, drawings—any pieces of information—that are not common knowledge;
- quotations of another person's actual spoken or written words; or
- Paraphrase of another person's spoken or written words.

If you are in doubt about whether what you are doing is inappropriate, consult your instructor. **A claim that "you didn't know it was wrong" will not be accepted as an excuse.**

Penalty for Plagiarism
The minimum penalty for an act of plagiarism is a 0 on the assignment, homework, and project. Serious cases of plagiarism may result in failure in the course as a whole, or expulsion from the university.

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	Internetworking: • Internetworking Basics • Internetworking Models • The OSI Reference Model	
(2)	Internetworking: • TCP/IP Model • The Cisco Three-Layer Hierarchical Model • Ethernet Networking • Ethernet Cabling	
(3)	Layer Switching: • Switching Services • Spanning Tree Protocol • LAN Switch types Tutorial	
(4)	Internet Protocols: • TCP/IP and the DoD Model • IP Addressing Tutorial	
(5)	Internet Protocols: • ARP and RARP • ICMP, DHCP, and BootP IP Subnetting and VLSM: • Subnetting Basics • Subnetting Class C	
(6) **First examination**	IP Subnetting and VLSM • Subnetting Class B • Subnetting Class A • Variable Length Subnet Masks (VLSM) • Troubleshooting IP Addressing	
(7)	Introduction to Cisco IOS: • The Cisco Router User Interface • Command-Line Interface	

(8)	Virtual LANS: • VLAN Basics • VLAN Memberships	
(9)	Virtual LANS: • Identifying VLANs • VLAN Trunking Protocol (VTP) • Configuring VLANs • Configuring VTP	
(10)	Managing a CISCO Internetwork: • The Internal Components of a Cisco Router • The Router Boot Sequence • Managing Configuration Registers • Backing Up and Restoring the Cisco IOS	
(11) **Second examination**	Managing a CISCO Internetwork: • Backing Up and Restoring the Cisco Configuration • Using Cisco Discovery protocol (CDP) • Using Telnet • Resolving Hostnames • Checking Network Connectivity	
(12)	IP routing: • Routing Basics • The IP Routing process • Configuring IP Routing in a Network	
(13)	IP routing: • Routing protocol basics • Routing Information protocol (RIP)	
(14)	Wide Area Networking Protocols: • Introduction to Wide Area Networks • Cabling the Wide Area Network	
(15)	Wide Area Networking Protocols: • Point-to-Point Protocol • Frame Relay • Integrated Services Digital Network (ISDN)	
(16) **Final Examination**	Wide Area Networking Protocols: • Dial-on-Demand Routing (DDR) • Selecting the WAN Technology Tutorial	

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

Module references
Books
Students will be expected to give the same attention to these references as given to the Module textbook(s)

[1] **Cisco - The Complete Reference**
Brian Hill
McGraw-Hill/Osborne
[2] Internetworking Routing Architectures
Bassam Halabi
Cisco Press.
ISBN: - - -
In addition to the above, the students will be provided with handouts by the lecturer.

Websites
http://www.cisco.com
http://www.mhhe.com/forouzan