



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

<u>Course Syllabus</u>	
Course Title: Communication System & computer Network	Course Number: 0371120
Course Level: First Year	Course prerequisite(s) and/or co requisite(s): Main Concepts in Computer Systems0371105
Lecture Time: 10.10-11:00, Sun. Tue. Thu.	Credit hours: 3

<u>Academic Staff Specifics</u>				
Name	Rank	Office Number and Location	Office Hours	E-mail Address
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Course module description:

This course is an introductory course on computer networks. Using the Internet as a vehicle, this course introduces the underlying concepts and principles of modern computer networks with emphasis on protocols, architectures, and implementation issues. The main goal of this course is to understand layering in computer networks, understand different protocol stacks (OSI and TCP/IP), understand functions and protocols within a layer, understand how layers fit together and finally understand how the Internet works.

Course module objectives:

- Understand fundamental underlying principles of computer networking,
- Understand the terminology and concepts of the TCP/IP reference model,
- Understand the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks,
- Understand the main network applications in each layer of the TCP/IP model,
- Define contemporary issues in networking technologies,
- Use a packet capturing and networking tools,

Course/ module components

- **Books**
Text book:

Computer Networks: A Top-Down Approach, 5th Edition,

Authors: James F. Kurose, and Keith W. Ross,

Publisher: Addison Wesley,

Year of Publication: 2010.

In addition to the above, the students will be provided with handouts by the lecturer.

Homework guide:

HOMEWORK: Homework is an essential part of the educational process.

The homework in this course will reinforce the material covered in the classroom and provide time for practice. Students will earn points for each homework assignment completed. Homework assignments will be graded based on completion.

HOMEWORKS GRADING SCHEME Grades will be determined as follows:

Homework	Submission date	Grade
Assignment 1	Third week	2 marks
Assignment 2	Eighth week	2 marks
Assignment 3	Twelfth week	2 marks
Paper	Fifteenth week	5 marks

Teaching methods:

- Duration: 16 weeks in first semester, 48 hours in total
- Lectures: 48 hours (3 hours per week),
- Laboratories: 1 per three weeks

Learning outcomes:

- Knowledge and understanding

A student completing this module should be able to:

- Examine and comprehend the following networking concepts:
 - Basic computer networking concepts including Circuit-switching and Packet-switching, Residential access networks (point-to-point, dialup modem, ADSL, cable modem), Protocol layer stack, Client-Server paradigm, and Packet-switched network delay calculation
 - Application-layer applications including Telnet, FTP, DNS, HTTP, SMTP
 - Other state of arts topics including Wireless and Mobile Networks, and Security in Computer Network.
- Examine and analyze the following transport-layer concepts:
 - Transport-Layer services
 - Reliable vs. un-reliable data transfer
 - TCP protocol
 - UDP protocol
- Examine and synthesize the following network-layer concepts:
 - Network-Layer services
 - Routing
 - IP protocol
 - IP addressing
- Examine and evaluate the following link-layer and local area network concepts:
 - Link-Layer services
 - Ethernet
 - Token Ring
 - Error detection and correction
 - ARP protocol

- Use a packet capturing tool to examine network packets.

Cognitive skills (thinking and analysis).

- The lecturer will present the material in the text book in an interactive way that stimulates the thinking side of students.
- Conducting the learning objectives for each module components in clear manner to insure the material is digested by the students.

Communication skills (personal and academic).

- Module language: English
- For every lecture the last five minutes will be open for discussion. For further discussion, the students are welcome at the lecturer s office hour as appeared in first page.
- Time Management: Assignments are varied, integrated, and overlapping, and students must focus on multiple issues, projects, and demands. Students must, therefore, take responsibility for planning and pacing their own work as well as developing time management skills.
- Project Development: Groups of approximately two to three students develop projects, complete research, schedule meetings, write papers and reports, and deliver a 20-30 minute oral presentation using visual aids.
- Group Management: Students work on group projects to practice interpersonal skills by communicating with group members, other groups, and peers outside the group.

Assessment instruments

- Quizzes.
- Home works
- Final examination: 40 marks

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20
Second examination	20
Final examination: 40 marks	40
Attendance, Quizzes, and Home works	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)	Computer Networks and the Internet	
(2)	Computer Networks and the Internet	
(3)	Computer Networks and the Internet	Quiz
(4)	Application Layer	
(5)	Application Layer	
(6) First Examination	Quick review, First Exam	
(7)	Transport Layer	
(8)	Transport Layer	Quiz
(9)	Network Layer and Routing	
(10)	Network Layer and Routing	
(11) Second Examination	Quick review, Second Exam	
(12)	Link Layer and Local Area Networks	Quiz
(13)	Link Layer and Local Area Networks	
(14)	Security in Computer Networks	
(15)	Discuss Students Papers	Quiz
(16) Final Examination	Quick review, Final Exam	

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

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

[1] Computer Networks: A Top-Down Approach, 5th Edition, 2009

Authors: James F. Kurose, and Keith W. Ross.

Publisher: Addison Wesley

[2] Computer Networks, 5th Edition, 2010

Authors: Andrew S. Tanenbaum, David J. Wetherall

Publisher: Prentice Hall

Websites

Wireshark, <http://www.wireshark.org/>