Arab Academy for Science, Technology, and Maritime Transport

College of Computing and Information Technology

CC231

Introduction to Networks

Spring 2012
3 Credit Hours

Instructor: Dr. Ayman Abdel-Hamid
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Office hours: by appointment

Text

James Kurose and Keith Ross, "Computer Networking: A Top-Down Approach", 5th Edition, Addison Wesley, 2010

- 5th Edition Web Site

References

1- Andrew Tanenbaum, *Computer Networks*, 4th Edition, Prentice Hall, 2003.
2- Douglas E. Comer, *Internetworking with TCP/IP Volume I: Principles, Protocols, and Architecture*, 5th edition, Prentice Hall, 2005.

Course Objective

The course is an introduction to computer networks architecture and protocols with special emphasis on the Internet. The course will present the IP protocol stack including application, transport, network, and link layers. Such coverage will illustrate the main concepts, protocols, and services provided by each layer. Hands-on experience will be provided through the use of a packet sniffing and protocol analysis tool. In addition, some simple client-server network programming assignments will be presented

Course Workload

Course material will be introduced in lectures. Exams, which test your acquired knowledge, will be scheduled during lecture time unless otherwise stated. Furthermore, exercises/questions will be assigned as homework in tutorial sessions. Moreover, a lab component will present hands-on knowledge. Some programming assignments are planned as part of the practical aspect of the course.

Topics

Tentatively, the topics that will be covered include:

- Computer Networks and the Internet
- Application Layer
  - Principles of network applications (Web and HTTP, FTP, Email, and DNS)
- Transport Layer
  - Transport layer services (connection-oriented (TCP) and connectionless (UDP) services)
- Network layer
  - Inner workings of the IP protocol (Forwarding and addressing in the Internet) and sample routing algorithms
- Link Layer and Local Area Networks
  - Design of Ethernet and multiple access protocols

Grading

7^{th} week	7^{th} week exam + quizzes +tutorial work (30)
12^{th} week	12^{th} week exam (20)
Semester Work (attendance, homework, assignments, quizzes, etc.)	10
Comprehensive Final Exam	40

The instructor reserves the right to change the grading scheme or add assignments/projects/exams.

Policies

- Attendance is crucial to your success in this course. You have the responsibility to cover any missed material.
- Missed exams cannot be made up, without proper documentation.

Academic Honesty

The honor code applies to all homework/assignments and examinations. The instructor's academic honesty policy is very strict; instances of academic dishonesty will be severely penalized. *All work submitted must be the student's own work!* It is unprofessional and dishonest to submit someone else's work as your own.