

CDA 4506C: DESIGN AND IMPLEMENTATION OF COMMUNICATION NETWORKS (Spring 2006)

Credits: 3

Class Hours: Tues-Thurs 10:30-11:45 am in Engineering II, Room 105

Lab Hours: Mon. 11:00 – 12:50 pm / Mon. 3:00 – 4 :50 pm /Tues. 1:00 – 2:50 pm /
Wed. 10:00 – 11:50 am / Fri. 10:00 – 11:50 am.

Instructor:

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Office Hours: Thurs 12:00-2:00 pm

Teaching Assistants:

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Office Hours: TBA

Suchandra Goswami
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Office: CS Building, Room 108
Office Hours: Thurs. 1:30-3:30pm.

Prerequisites: COP 3502, MHF 2104 or COT 3100C and a desire to learn.

Catalog Course Description

Data communication networking technologies (TCP/IP, Ethernet, Gigabit Ethernet, ATM, Frame Relay), products (routers, switches, adapters, cabling), base design and detailed configuration including hands-on exercises.

Detailed Course Outline

This course presents an overview of the concepts, technology, architecture and software that forms the basis of computer networks. The course will evolve as the semester progresses but tentatively the following topics will be covered:

- Frequency and Time Division Multiplexing
- Circuit and Packet Switching
- Local and Wide Area Networking Technologies Connection and extension (repeaters, bridges, hubs, switches)
- Network Addressing

- Protocol Layers (TCP/IP/MAC)
- Unicast and Multicast Routing
- Congestion control
- Security: Cryptography, message security, authentication, key management, security protocols

Required Textbook

- Forouzan BA, Data Communications and Networking, 3rd ed., 2004, 0-07-292354-7, McGraw-Hill.
http://highered.mcgraw-hill.com/sites/0072515848/information_center_view0/

Reference Books

- Stallings, W., Data and Computer Communications, 7th Edition, 2004. Prentice Hall. ISBN: 0-13-100681-9.
- Kurose and Ross, Computer Networking, A top down approach featuring the Internet, 2nd ed. Addison-Wesley.
- Comer, D.E., Computer Networks and Internets, Fourth Edition, 2004. Prentice Hall. ISBN 0-13-143351-2.

Tools Used

Boston's CISCO LAN and OPNET's IT Guru simulators.

Grading

Exam 1 (in-class)	10%
Exam 2 (in-class)	10%
Final Exam (Comprehensive)	20%
Quizzes and class participation	5%
Assignments	25%
Labs	30%

A: 90% or above, B : 80 -90%, C : 70-80%, D:50-70%; F: less than 50%.

- The exam dates will be announced in class and on WebCT at least two weeks in advance.
- The final exam will be comprehensive and is mandatory for all.
- There will be in-class surprise or announced quizzes.
- Labs are essential part of this course. There will be ten lab assignments which you will do during your lab session. The teaching assistants will explain the labs during the lab sessions and will collect your lab report at the end of same session.

- In addition to the assignments that are graded, homework problems will be assigned almost every week. These homework problems will not be collected or graded. But, the exams will have similar problems and hence doing these problems regularly is important for your success in this course.

Course Policies

- **WebCT:** I will be using WebCT to post lecture slides, announcements, grades and other information related to this course. Please make sure to check WebCT regularly for any important information about the course.
- **Email:** Email is the best way to contact me. Please use WebCT and NOT seema@cs.ucf.edu to send emails to me and make sure to include the course number in the subject. Please check your emails often for any important information about the course.
- **Electronic Devices: Laptops, PDAs, and other mobile computing devices must be turned off during lectures and tests. Ringer on your cell phone must be turned off before coming to class and absolutely no phone calls during the class.**
- **Missed Lectures:** Students are responsible for obtaining information about assignments and material covered or provided during missed lectures from other students in the course.
- **Makeup Labs:** No makeup labs will be given.
- **Makeup Exams:** No makeup exams will be given except for medical reasons with written documentation.
- **Makeup Quizzes:** No makeup quizzes will be given.
- **Late Assignments:** Assignments must be turned in at the beginning of class on the assigned day for full credit. There will be a 10% penalty for assignments turned one day within the due date and time. There will be a 25% penalty for assignments turned two days within the due date and time. **No homework will be accepted after two days.**
- **Academic Integrity:** Plagiarism and Cheating of any kind on an examination, quiz or assignment will not be tolerated. It may result in an “F” for that assignment (and may, depending on the severity of the case, lead to an “F” for the entire course) and may be subject to appropriate referral to the Office of Student Conduct for further action. Please refer to The Golden Rule (<http://www.goldenrule.sdes.ucf.edu/>) of the University of Central Florida's Student Handbook for further information.

Important Dates

Last Day to Add/Drop:	January 13, 2006.
Final Exam:	April 25, 2006, 10:00-12:50 pm.