

Fayetteville State University
College of Basic and Applied Sciences
Department of Mathematics and Computer Science
CSC 270 –Networking Basics
Fall 2010

I. LOCATOR INFORMATION:

Instructor: **Dr. Ping-Chu Chu**

Course # and Name: **CSC270 02 Networking Basics**

Semester Credit Hours: **3**

Day and Time Class Meets **TR:3:45-5pm: in SBE229**

Email Address: **pchu@uncfsu.edu**

Office Location: **SBE311**

Office Hours: **MWF:11-**

1:30pm TR:12:30-1pm:

Office Phone: **-672-1654**

Prerequisites: **None**

FSU Policy on Electronic Mail: Fayetteville State University provides to each student, free of charge, an electronic mail account (username@uncfsu.edu) that is easily accessible via the Internet. The university has established FSU email as the primary mode of correspondence between university officials and enrolled students. Inquiries and requests from students pertaining to academic records, grades, bills, financial aid, and other matters of a confidential nature must be submitted via FSU email. Inquiries or requests from personal email accounts are not assured a response. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail.

Rules and regulations governing the use of FSU email may be found at

<http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf>

II. COURSE DESCRIPTION:

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Packet tracer activities help students analyze protocol and network operation and build small networks in a simulated environment. Students build simple LAN topologies by applying basic principles of cabling, performing basic configurations of networks devices such as routers and switches, and implementing IP addressing schemes.

III. DISABLED STUDENT SERVICES:

In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ACA) of 1990, if you have a disability or think you have a disability to please contact the Center for Personal Development in the Spaulding Building, Room 155 (1st Floor); 910-672-1203.

IV. TEXTBOOK AND COURSE RESOURCES:

Text Book: Dye, McDonald & Rufi, Network Fundamentals, CCNA Exploration Companion Guide, 1/e, Cisco press, 2008, 560p. ISBN-10: 1587132087, ISBN-13: 9781587132087.

Lab Manual: Rufi, Oppenheimer, Woodward & Brady, Network Fundamentals, CCNA Exploration Labs and Study Guide, Cisco press, 2008, 408p. ISBN-10: 1587132036, ISBN-13: 9781587132032.

CCNA Portable Command Guide
ISBN-13: 978-1-58720-193-6

<http://cisco.netacad.net>

V. STUDENT LEARNING OUTCOMES:

The following objectives are the desired outcomes of this class and will be evaluated during this course. Upon completion of this course, students will be able to:

1. Explain how communication works in data networks and the Internet
2. Recognize the devices and services that are used to support communications across an Internetwork
3. Use network protocol models to explain the layers of communications in data networks
4. Explain the role of protocols in data networks
5. Describe the importance of addressing and naming schemes at various layers of data networks
6. Describe the protocols and services provided by the application layer in the OSI and TCP/IP models and describe how this layer operates in various networks
7. Analyze the operations and features of transport layer protocols and services
8. Analyze the operations and features of network layer protocols and services and explain the fundamental concepts of routing
9. Design, calculate, and apply subnet masks and addresses to fulfill given requirements
10. Describe the operation of protocols at the OSI data link layer and explain how they support communications
11. Explain the role of physical layer protocols and services in supporting communications across data networks
12. Explain fundamental Ethernet concepts such as media, services, and operation
13. Employ basic cabling and network designs to connect devices in accordance with stated objectives
14. Build a simple Ethernet network using routers and switches
15. Use Cisco command-line interface (CLI) commands to perform basic router and switch configuration and verification

16. Analyze the operation and features of common application layer protocols such as HTTP, Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), Simple Mail Transfer Protocol (SMTP), Telnet, and FTP
17. Utilize common network utilities to verify small network operations and analyze data traffic

VI. COURSE REQUIREMENTS AND EVALUATION CRITERIA:

a. Grading Scale:

Letter grade will be assigned based on the following scale.

A: 90-100,

B: 80-89,

C: 70-79,

D: 60-69,

F: < 60

If your letter grade is C or above, you will be recommended to take CSC271.

b. Attendance Requirements:

Students are required to adhere to the attendance requirements as per FSU attendance policy.

c. Graded Assignments & Value of Each Assignment:

The students' final grade will be based on the following percentages:

Class attendance	10 %
Homework	10 %
Chapter test (on line)	20 %
Final Skills Based Assessment	15 %
Final Examination (on line)	25 %
Lab assignments	20 %

d. Policy on Missed or Late Assignments:

Assignment must be submitted on time to receive full credit. Twenty percent (20%) of the total points will be deducted from each school day the assignment is overdue.

e. Other:

Each student must independently complete all homework and network lab assignments unless otherwise specified. You may discuss assignments with each other in general terms, but all work turned in must be your own.

Academic Dishonesty: Plagiarism and cheating are serious offenses and may be penalized by failure on exam, failure in course, and/or expulsion from the University. For more information, refer to the University Catalog.

Student Behavior Expectations: The instructor will respect all students and will make every effort to maintain a classroom climate that promotes learning for all students. Students must accept their responsibility for maintaining a positive classroom environment by abiding by the following rules:

1. Students are expected to arrive to class on time, remain in class until dismissed by the instructor, and refrain from preparing to leave class until it is dismissed.
2. Student/teacher relationships, as well as relationships among peers, must be respectful at all times.
3. Students are not permitted to wear headphones or other paraphernalia that may be distracting to the classroom environment.
4. Students must refrain from any activity that will disrupt the class; this includes turning off cell phones and pagers.
5. Students are not permitted to use profanity or inappropriate language in the classroom.
6. Students will not pass notes or carry on private conversations while class is being conducted.

Consequences for Failing to Meet Behavioral Expectations: The first time a student violates one of these rules, the instructor will warn him or her privately, either after class or before the next class. (Faculty members reserve the right to warn students publicly if needed.) The second time a student violates the guidelines; the instructor may deduct as many as twenty points from the student's next exam grade. If a student violates the guidelines three times, the instructor will report the student to the Dean of Students for disciplinary action according to the FSU Code of Student Conduct.

VII. COURSE OUTLINE AND ASSIGNMENT SCHEDULE

Week	Calendar	Topics	Chapter	Event
1		Living in a Network-Centric World	Chapter 1	Labs
2		Communicating Over the Network	Chapter 2	Labs
3		Application layer Functionality & Protocols	Chapter 3	Labs
4		OSI Transport Layer	Chapter 4	Labs
5		OSI Network Layer	Chapter 5	Labs
6		Addressing the Network – IPv4	Chapter 6	Labs
7		Addressing the Network – IPv4	Chapter 6	Labs
8		Data Link Layer	Chapter 7	Labs
9		OSI Physical Layer	Chapter 8	Labs
10		Ethernet	Chapter 9	Labs
11		Ethernet	Chapter 9	Labs
12		Planning & Cabling Networks	Chapter 10	Labs
13		Configuring and Testing Your Network	Chapter 11	Labs
14		Intro to Routing & Packet Forwarding (CCNA2)	Chapter 12	Labs
15		Static Routing (CCNA2)	Chapter 13	Labs
16		Review		Final exam

*Note: This schedule is subject to change for the optimum benefit of the class as a whole. Therefore, it is important to stay alert and attend class regularly. Class announcement and the due date for homework and projects are posted on Blackboard system.

VIII. TEACHING STRATEGIES

Lectures, projects and Network Labs.