Computer Networking and Management
Course Outline and Syllabus

Instructor

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Required Textbook:

Network+ guide **to networks, Thomson course technology, fourth edition.**

Course Description:

In this class, students will understand the network concept from different aspects. How to connect networks, troubleshoot networks and also designing networks. Students will work with some Cisco simulations so they can understand more about network devices.

Homework:

Homework assignments are not mandatory "your grade will not be affected if you do not do homework assignments". But solving Homework assignments will help you to get a good grade in the course "trust me on this". Late Homework will not be accepted after the due date.

Examinations:

There will be one midterm and one final examination. All exams will be closed book. Any additional handouts will be supplied before the exam.

Quizzes:

There will be three quizzes in this class. After finishing two chapters a quiz will be given. If you miss a quiz there is NO MAKE-UP quiz.

General Rules:

–If you miss a lecture, you will be responsible to cover the material that you missed.

-There will be NO MAKE-UP exams, except for excused letter provided by the department supervisor.

-Any student enters the class after the instructor entered, will be counted as a late entry and will miss 0.5 of the attendance.

Presentation:

There will be a presentation on this class. Every student will present some materials in the class. You will be suggested with some topics to choose from.

Project:

There will be Cisco software. We will work in this software and create some networking devices, configure by using IOS provided by this software simulation.

Bonus Questions:

There are questions during lectures, depending on the question level, you be granted 1/4, 1/2 or 1 point. Late on, you will add this point to you quiz grade to get better grade.
 GOOD LUCK.

The Gold Key:

Attendance, listening to the lecture, NO side talk during instructor explanation, asking about the lecture and solving homework questions, is the Gold key. You will get my attention and pass the course with a good grade.

Grading:

Final Exam	**%35**
Midterm	**%25**
Quizzes	**%15**
Presentation	**%10**
Project	**%10**
Class work	**%5**

Course goals

After completing the course student will be able to:

Chapter1:

• List the advantages of networked computing relative to standalone computing
• Distinguish between client/server and peer-to-peer networks
• List elements common to all client/server networks
• Describe several specific uses for a network
• Identify some of the certifications available to networking professionals
• Identify the kinds of nontechnical, or "soft," skills that will help you succeed as a networking professional

Chapter 2:

• Identify organizations that set standards for networking
• Describe the purpose of the OSI Model and each of its layers
• Explain specific functions belonging to each OSI Model layer
• Understand how two network nodes communicate through the OSI model
• Discuss the structure and purpose of data packets and frames
• Describe the two types of addressing covered by the OSI Model

Chapter 3:
• Explain basic data transmission concepts, including full duplexing, attenuation, and noise
• Describe the physical characteristics of coaxial cable, STP, UTP, and fiber-optic media
• Compare the benefits and limitations of different networking media
• Identify the best practices for cabling buildings and work areas
• Specify the characteristics of popular wireless transmission methods, including 802.11, infrared,

and Bluetooth
• In data networking, transmit means to issue signals to the network medium
• Transmission refers to either the process of transmitting or the progress of signals after they have been transmitted

Chapter 4:

• Identify the characteristics of TCP/IP, IPX/SPX, NetBIOS, and AppleTalk
• Understand how network protocols correlate to layers of the OSI Model
• Identify the core protocols of the TCP/IP suite and describe their functions
• Identify the well-known ports for key TCP/IP services
Understand addressing schemes for TCP/IP, IPX/SPX, NetBEUI, and AppleTalk
• Describe the purpose and implementation of DNS (Domain Name System) and WINS (Windows Internet Naming Service)
• Install protocols on Windows XP clients

Chapter 5:

• Identify the functions of LAN connectivity hardware
• Install and configure a NIC (network interface card)
• Identify problems associated with connectivity hardware
• Describe the factors involved in choosing a NIC, hub, switch, or router
• Discuss the functions of repeaters, hubs, bridges, switches, routers, and gateways, and the OSI Model layers at which they operate
• Describe the use and types of routing protocols

Chapter 6:

• Describe the basic and hybrid LAN physical topologies, and their uses, advantages and disadvantages
• Describe the backbone structures that form the foundation for most LANs
• Compare the different types of switching used in

data transmission
professional
• Understand the transmission methods underlying
Ethernet, Token Ring, FDDI, and ATM networks
• Describe the characteristics of different wireless
network technologies, including Bluetooth and the
three IEEE 802.11 standards

Chapter 7:

• Identify a variety of uses for WANs
• Explain different WAN topologies, including their
advantages and disadvantages
• Describe different WAN transmission and
connection methods, including PSTN, ISDN,
T-carriers, DSL, broadband cable, SONET, and
wireless Internet access technologies
• Compare the characteristics of WAN technologies,
including throughput, security, and reliability
• Describe the software and hardware requirements
for remotely connecting to a network
• Internet is largest WAN in existence
– Most WANs arise from need to connect buildings
• WANs and LANs similar in fundamental ways
– Differ at Layers 1 and 2 of OSI Model
• WANs typically send data over publicly available
communications networks
– Network service providers (NSPs)
– Dedicated lines
• WAN link: connection between WAN sites (points)

Time Table:

Week	Week by Date	Content
1	Feb 12	Introduction + Chapter 1
2	Feb 19	Chapter 1 + Chapter 2
3	Feb 26	Chapter 1 + Chapter 2
4	Mar 5	Chapter 3 + Quiz1 (1,2)
5	Mar 12	Chapter 3
6	Mar 19	Chapter 4 + Quiz2 (3,4)
7	Mar 26	**Midterm**
8	Apr 2	Chapter 5
9	Apr 9	Chapter 6
10	Apr 16	Chapter 7 + Quiz3 (5,6,7)
11	Apr 23	Cisco Simulation + Presentation week
12	Apr 30	Presentation week
13	May 8	Final Review
14	May 22 (Mon)	**Final**