

**Course:** NET 111 – Networking for Home and Small Businesses

**Credits:** 3

**Textbook Required:** *CCNA Discovery 4.0 Networking for Home and Small Businesses Student Lab Manual.*

**Course Description:** This course teaches students the skills needed to obtain entry-level home network installer jobs. It also helps students develop some of the skills needed to become network technicians, computer technicians, cable installers, and help desk technicians. It provides a hands-on introduction to networking and the Internet using tools and hardware commonly found in home and small business environments. Labs include PC installation, Internet connectivity, wireless connectivity, file and print sharing, and the installation of peripheral devices.

**Course Objectives:**

- Install and verify PC peripherals
- Select and Install a Windows OS with updates and patches
- Use hierarchical network management to develop IP and naming schemes
- Understand how classless IP numbers are developed and used.
- Use Packet Tracer 5.0 to design and test network topologies
- Design and install a Home and a Small office wired and wireless network
- Select the correct ISP for the networks that they design and connect to them
- Use the Cisco ISR and Linksys GUIs to configure DHCP, DNS, NAT, and other network services
- Use common PC Tools, ping, netstat, ipconfig, tracertr, nslookup, telnet, and arp -a to troubleshoot network errors
- Harden network PCs to network attacks caused by viruses, worms, trojan horses, and spyware.
- Analyze NAT bindings inside the ISR to troubleshoot networking connections.
- Use good soft skills to solve customer problems in a helpdesk situation and document the solutions.

**Evaluation:** Evaluation will be based on the scores achieved on the chapter tests, the final online test, the successful completion of the lab assignments, homework assignments, and the final skills test. The online chapter tests and homework assignments will be scored on a scale of 0 – 10. The final online test will be scored on a scale of 0 – 100. The lab assignments will be scored as 2 points for each one completed. The Capstone Project is 10 points. The skills test will be scored on a scale of 1 – 100. (Note: only pencil, preferably .5 HB lead, is to be used in the lab book).

**Due Dates:** Lab Assignments are posted on e-learning without due dates. All lab work must be completed by the end of the course. To allow students to work at their own pace and to complete the labs by the end of the course the lab will be open beyond the scheduled class time. It is essential to maintain the schedule of due dates on the chapter tests. Therefore a 10% deduction will occur for each day an online chapter test is late. It is also essential that all lab assignments are completed prior to the skills test. The skills test will be scheduled during the last week of the course at the discretion of the instructor. Students are expected to manage their time accordingly as any assignments not completed by this time will be graded as a zero.

Grading Scale:	94-100% = A	Chapter Tests .....	25%
	87-93% = B	Lab Assignments.....	25%
	80-86% = C	Skills Test .....	25%
	79% and under = F	Final test .....	25%
			Total = 100%

**Attendance:** *Attendance is mandatory.* Any student absent more than 6 hours will cause an automatic drop slip to be filed. The student may request an appeal and should attend all scheduled classes until the outcome of their appeal is known. Accumulated tardiness or early exits from a class period may count as an hour absent.

**Academic Honesty:** Refer to department policy on cheating and use of other's work.

**Policy and Procedures:** General policies and procedures are outlined in the LATI Student Handbook. Use of the computers is restricted to that necessary to complete Cisco class assignments. Online chapter tests may be retaken one time only. The final online test may be retaken once and only if it will make the difference between passing and failing the class. The maximum grade that will be recorded for second attempt will be 80%. The Skills test must be passed with an 80% score or above. Skills test may be retaken once by anyone choosing to do so or until passed but must be completed within the scheduled class dates.

**Statement:** Without my permission, you do not have the authority to record any of my class, its class members, or any content expressed here.

**Schedule:** Class times and location will be at the discretion of the instructor.

**Course Outline:**

- I. Personal Computer Hardware
  - A. Chapter Introduction
  - B. Personal Computers and Applications
  - C. Types of Computers
  - D. Binary Representation of Data
  - E. Computer Components and Peripherals
  - F. Chapter Summary
  
- II. Operating Systems
  - A. Chapter Introduction
  - B. Choosing the Operating System
  - C. Installing the Operating System
  - D. Maintaining the Operating System
  - E. Chapter Summary
  
- III. Connecting to the Network
  - A. Chapter Introduction
  - B. Introduction to Networking
  - C. Principals of Communication
  - D. Communication on a Local Wired Network
  - E. Building the Access Layer of an Ethernet Network
  - F. Building the Distribution Layer of a Network
  - G. Plan and Connect a Local Network
  - H. Chapter Summary
  
- IV. Connecting to the Internet Through an ISP
  - A. Chapter Introduction
  - B. The Internet and How We Connect to it
  - C. Sending Information Across the Internet
  - E. Networking Devices in a NOC
  - E. Cables and Connections
  - F. Working with Twisted Pair Cabling
  - G. Chapter Summary
  
- V. Network Addressing
  - A. Chapter Introduction
  - B. IP Addresses and Subnet Masks
  - C. Types of IP Addresses
  - D. How IP Addresses are Obtained
  - E. Address Management
  - F. Chapter Summary

- VI. Network Services
  - A. Chapter Introduction
  - B. Client/Servers and Their Interaction
  - C. Application Protocols and Services
  - D. Layered Model and Protocols
  - E. Chapter Summary
  
- VII. Wireless Technologies
  - A. Chapter Introduction
  - B. Wireless Technology
  - C. Wireless LANs
  - D. Security Considerations on a Wireless LAN
  - E. Configuring an Integrated AP and Wireless Client
  - G. Chapter Summary
  
- VIII. Basic Security
  - A. Chapter Introduction
  - B. Networking Threats
  - C. Methods of Attack
  - D. Security Policy
  - E. Using Firewalls
  - F. Chapter Summary
  
- IX. Troubleshooting Your Network
  - A. Chapter Introduction
  - B. Troubleshooting Process
  - C. Troubleshooting Issues
  - D. Common Issues
  - E. Troubleshooting and the Help Desk
  - F. Chapter Summary

Revised: 8/09