Cisco Discovery 1: Networking for Home and Small Business (ITCC 1310)

Credit: 3 semester credit hours (2 hours lecture, 4 hours lab)

Prerequisite/Co-requisite: None

Course Description

This introductory course teaches students the skills needed to obtain entry-level home and small business network installer jobs, 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 game consoles, scanners, and cameras.

Required Textbook and Materials

1. *Introduction to Networks Companion Guide*, by Cisco Networking Academy, Cisco Press, 2013.
    a. ISBN number for print book is 978-1-58713-316-9

Course Objectives

Upon completion of this course, the student will be able to:

1. Set up a personal computer system and share resources such as files and printers.
2. Plan and install a home or small business network and connect it to the Internet using critical thinking to troubleshoot the Internet connection
3. Recognize and mitigate security threats to a small network.
4. Configure common Internet applications and basic PC services.

Course Outline

1. Exploring the Network
    a. Globally Connected
    b. LANs, WANs, and the Internet
    c. The Network as A Platform
    d. The Changing Network Environment
    e. Cisco Network Architecture
    f. CCNA
2. Configuring a Network Operating System
    a. IOS Boot Camp
    b. Getting Basic
    c. Address Schemes
3. Network Protocols and Communications
    a. Rules of Communication

   b. Network Protocols and Standards
   c. Moving Data in the Network
4. Network Access
   a. Physical Layer Protocols
   b. Network Media
   c. Data Link Layer Protocols
   d. Media Access Control
5. Ethernet
   a. Ethernet Protocol
   b. Address Resolution Protocol
   c. LAN Switches
6. Network Layer
   a. Network Layer Protocols
   b. Routing
   c. Routers
   d. Configuring a Cisco Router
7. Transport Layer
   a. Transport Layer Protocols
   b. TCP and UDP
8. IP Addressing
   a. IPv4 Network Addresses
   b. IPv6 Network Addresses
   c. Connectivity Verification
9. Subnetting IP Networks
   a. Subnetting an IPv4 Network
   b. Addressing Schemes
   c. Design Considerations for IPv6
10. Application Layer
   a. Application Layer Protocols
   b. Well-Known Application Layer Protocols and Services
   c. The Message Heard Around the World
11. It's a Network
   a. Create and Grow
   b. Keeping the Network Safe
   c. Basic Network Performance
   d. Managing IOS Configuration Files
   e. Integrated Routing Services

Grade Scale

90 – 100 A
80 – 89 B
70 – 79 C

60 – 69	D
0 – 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

Labs	30%
Study Guides	10%
Module Tests	30%
Final Exam	30%

Course Requirements

1. Hands-on labs as assigned.
2. Packet Tracer labs as assigned.
3. Module Study Guides.

Course Policies

1. No food, drinks, or use of tobacco products in class.
2. Electronic devices not being used for the class, such as phones and headphones, must be turned off while in class.
3. Do not bring children to class.
4. Certification: If a student passes the certification test that is associated with this class, you will receive an "A" on the final exam and credit for 25% of your labs. If you have missed a previous test, you must still take the final exam to substitute for that grade.
5. Attendance Policy: Three absences are allowed. If a student is tardy to class or departs early three (3) times, it will be equal to one (1) absence. Each absence beyond three absences will result in a 2 point deduction from your final grade.
6. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.
7. Tools: Return all tools and/or software to their designated place.
8. A grade of 'C' or better must be earned in this course for credit toward degree requirement.
9. Additional course policies, as defined by the individual course instructor, will be outlined in the course addendum and provided by the instructor.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please

contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Technical Requirements (for courses using Blackboard)

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:

https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy

A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the LIT Catalog and Student Handbook. The LIT Catalog and Student Handbook may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office. Please note that the online version of the LIT Catalog and Student Handbook supersedes all other versions of the same document.

Certification Requirement

CNTT majors are required to earn certification in one of the following areas prior to graduation.

- A+ Certification
- Cisco Certified Entry Network Technician (CCENT)
- Cisco Certified Network Associate (CCNA)
- Microsoft Certified Solutions Associate (MCSA)

This course covers part of the material to prepare for the Cisco Certified Entry Network Technician (CCENT) and the Cisco Certified Network Associate (CCNA) Routing and Switching certifications. All material for the CCENT will be covered in the first two Cisco sources. All four Cisco courses must be completed to cover the material for the CCNA exam. The CCNA credential can be earned by taking two tests, Interconnecting Cisco Networking Devices Part 1 (ICND1) and Interconnecting Cisco Networking Devices Part 2 (ICND2), or by taking one test, Interconnecting Cisco Networking Devices: Accelerated (CCNAX). ICND1 is test number 100-101, ICND2 is test number 200-101, and the CCNAX test number is 200-120. Students are responsible for scheduling and paying for the certification through the LIT Testing Center. More information about the certification can be found online at http://www.cisco.com/c/en/us/training-events/training-certifications/certifications.html.

Course Schedule

Week of	Topic	Reference
Week 1	Syllabus and policies	

Week of	Topic	Reference
	Navigating Cisco Website	https://cisco.netacad.net
	Course Introduction	
Week 2	Chapter 1: Exploring the Network	pp. 1-58
Week 3	Chapter 2: Configuring a Network Operating System	pp. 59-114
Week 4	Chapter 3: Network Protocols and Communications	pp. 115-160
	Chapter 4: Network Access	pp. 161-230
Week 5	Chapter 4: Network Access	pp. 161-230
	Chapter 5: Ethernet	pp. 231-282
Week 6	Chapter 5: Ethernet	pp. 231-282
	Chapter 6: Network Layer	pp. 283-340
Week 7	Chapter 7: Transport Layer	pp. 341-390
Week 8	Chapter 8: IP Addressing	pp. 391-464
Week 9	Chapter 8: IP Addressing	pp. 391-464
Week 10	Chapter 8: IP Addressing	pp. 391-464
Week 11	Chapter 9: Subnetting IP Networks	pp. 465-514
Week 12	Chapter 9: Subnetting IP Networks	pp. 465-514
Week 13	Chapter 9: Subnetting IP Networks	pp. 465-514
Week 14	Chapter 10: Application Layer	pp. 515-550
Week 15	Chapter 11: It's a Network	pp. 551-626
Week 16	Final Exam	https://cisco.netacad.net

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