Course Syllabus

Engineering Technologies and Mathematics Division

Course #: CIT 1400 Course Name: Networking I

Class Information

Class Days: Class Time:
Location: Classroom: B304 Laboratory: B304
Credit Hours: 4 Contact Hours: 6
Lab Hours: 4 Lecture Hours: 2

Contact Information

Instructor: Office Location:
Phone:
Office Hours: as posted on door A201I
Division Office/Location: E107 Division Phone: 419-559-2410
Full-time Contact Person: Sara Akers Phone(s): 419-559-2117

Course Information

Course Description:
The curriculum for this course is based upon the Cisco Networking Academy Semesters 1 & 2 using the Routing & Switching Curriculum. Part 1 - This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. 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. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Part 2 - This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course students will be prepared to take the CCENT exam and meet the prerequisite of the follow-up Networking 2 course. (SPRING)

Prerequisite(s): CIT 1241 Microcomputers

Corequisite(s): CIT 1345 Infrastructure Management

Entry Level Skills and Knowledge:
- Knowledge of Microcomputers Hardware and Operating System Software
- Knowledge of the Internet-particularly the WWW
- College reading comprehension (ENG 1050)
- Algebraic math skills (MTH 1310)
- Binary & Hexadecimal numbering system
Required Texts, Supplies and Equipment:

- Introduction to Networks Course Booklet [ISBN: 9781587133114]; Cisco Networking Academy; Cisco Press
- Routing and Switching Essentials Booklet [ISBN: 9781587133190]; Cisco Networking Academy; Cisco Press

Grading:

90 - 100       A  
80 -  89        B  
70 -  79        C  
60 -  69        D  
 0 -  59        F

Learning Outcomes:

General Learning Outcomes
1. Communicate effectively in writing and speaking.
2. Evaluate arguments according to the principles of logic.
4. Employ the methods of inquiry and research commonly used in the natural sciences, the social sciences, mathematics, the arts, and the humanities.
6. Demonstrate literacy in the electronic environments, which may include hardware, applications, and/or media.

Course Learning Outcomes
1. Identify and describe different network architectures (Module 1 – Chapter 1)
2. Identify and describe the Cisco IOS and basic command structure on a switch; construct a simple network topology (Module 1 – Chapter 2)
3. Identify and describe the different layers of the OSI and TCP/IP Models (Module 1 – Chapter 3, 4, 5, 6, 7, 10)
4. Identify and describe IPv4 and IPv6 addresses – (Module 1 – Chapter 8)
5. Calculate the process of subnetting IP addresses (Module 1 – Chapter 9)
6. Demonstrate network planning and predict and solve security threats to a network (Module 1 – Chapter 11)
7. Identify and describe switch network terminology and hardware (Module 2 – Chapter 1)
8. Practice configuring the basic commands on a switch (Module 2 – Chapter 2)
9. Identify, describe, practice configuring and troubleshooting VLANs (Module 2 – Chapter 3)
10. Practice configuring the basic commands on a router (Module 2 – Chapter 4)
Course Learning Outcomes, continued

11. Identify, describe, practice configuring and troubleshooting Inter-VLAN routing (Module 2 – Chapter 5)
12. Identify, describe, and practice configuring static routing (Module 2 – Chapter 6)
13. Identify, describe, and practice configuring dynamic routing (Module 2 – Chapter 7)
14. Identify, describe, and practice configuring Single-Area OSPF (Module 2 – Chapter 8)
15. Identify, describe, and plan Access Control Lists (ACL) (Module 2 – Chapter 9)
16. Practice configuring DHCP on a router (Module 2 – Chapter 10)
17. Describe, identify, and practice configuring static and dynamic NAT (Module 2 – Chapter 11)

Assessment of Student Learning: This course may include a project that is one of several that will be used by faculty to assess student academic performance in the program. A panel of faculty will review all (projects or whatever assessment activity you are doing), then assess and summarize the academic performance of students at this point in the program. The results of this assessment will be shared among the department faculty, used to identify needed changes or improvements, and submitted to the Student Academic Assessment Committee as part of the college’s overall student academic assessment effort.

Course Requirements:

The following elements will be used for calculating final grades for this course:

- Chapter Exam 25%
- Chapter Labs 25%
- Lab Final Exam 20%
- Online Final Exam 20%
- Instructor Evaluation* 10%

*Instructor evaluation is based upon class participation and attendance and preparedness (includes reading assignments), quality of questions, and individualized and group class activities.

Students are required to take exams with the rest of the class. Any student missing an exam must make up the test in advance or notify the instructor in advance. It will then be at the instructor’s discretion whether a make-up test will be permitted. Should a make-up test be permitted, the student has six (6) calendar days to complete the test.

All Assignments are due as specified on the course calendar or Plan of Work in Canvas. No late assignments will be accepted. Your instructor will inform you how to turn in the required assignments.
### Plan of Work:

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| **MODULE 2 – Routing and Switching Essentials** | |
| Chapter 1 – Introduction to Switched Networks | Week 9 |
| Chapter 2 – Basic Switching Concepts and Configuration | |
| Chapter 3 - VLANs | Week 10 |
| Chapter 4 – Routing Concepts | |
| Chapter 5 – Inter-VLAN Routing | Week 11 |
| Chapter 6 – Static Routing | |
| Chapter 7 – Routing Dynamically | Week 12 |
| Chapter 8 – Single-Area OSPF | |
| Chapter 9 – Access Control Lists | Week 13 |
| Chapter 10 – DHCP | |
| Chapter 11 – NAT for IPv4 | Week 14 |
| Open Week | Week 15 |
| CCNA 2 Finals – Lab & Online Exam | Week 16 |

### College Policies:

Academic integrity and honesty are basic core values of Terra State Community College. Students are expected to follow established standards of conduct, including academic integrity and honesty, as well as all other College policies. The Student Code of Conduct, which defines “cheating” and “plagiarism,” in addition to other forms of misconduct, can be found in the Terra Community College Catalog and Student Handbook or on the Terra website at [www.terra.edu](http://www.terra.edu). Please also refer to these sources for information regarding College policies, tutoring assistance, procedures for receiving accommodations for documented disabilities, course withdrawal procedures, career planning, and other sources of support for Terra students.