MASTER COURSE OUTLINE

Prepared By: Arthur Wanner/Tom Willingham Date: March 2020

COURSE TITLE

Cisco Networking: Intro to Networks

GENERAL COURSE INFORMATION

Dept.: CS	Course Num: 171	(Formerly: CS 156)
CIP Code: 11.0901	Intent Code: 21	Program Code: 527
Credits: 6		
Total Contact Hrs Per Qtr.: 88		
Lecture Hrs: 44	Lab Hrs: 44	Other Hrs:
Distribution Designation: General Elective (GE)		

COURSE DESCRIPTION (as it will appear in the catalog)

This course introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks - including IP addressing and Ethernet fundamentals. This is the first of three courses comprising the Cisco CCNAv7 curricula and covers the technical knowledge and skills required to take the Cisco CCNA exam.

PREREQUISITES

CS 104 and CS 105

TEXTBOOK GUIDELINES

Textbook and materials to be determined by CS Faculty

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Explain the advances in modern network technologies.
2. Implement initial settings including passwords, IP addressing, and default gateway parameters on a network switch and end devices.
3. Explain how network protocols enable devices to access local and remote network resources.
4. Explain how physical layer protocols, services, and network media support communications across data networks.
5. Calculate numbers between decimal, binary, and hexadecimal systems.
6. Explain how media access control in the data link layer supports communication across networks.
7. Explain how Ethernet operates in a switched network.
8. Explain how routers use network layer protocols and services to enable end-to-end connectivity.
9. Implement initial settings on a router and end devices.
10. Calculate IPV4 subnetting schemes and implement and IPV6 addressing scheme.
11. Use various tools to test network connectivity.
12. Compare and explain operations of network layers to support communications and applications.
13. Configure and implement small networks

INSTITUTIONAL OUTCOMES

IO1 **Communication**: Students will be able to communicate clearly and effectively within a workplace context

IO2 **Quantitative Reasoning**: Analyze and solve computational problems using a modern program language

IO3 **Human Relations/Workplace Skills**: Students will be able to demonstrate teamwork, ethics, appropriate safety awareness and/or workplace specific skills

COURSE CONTENT OUTLINE

1. Exploring the Network
2. Basic Switch and End Device Configuration
3. Protocol Models
4. Physical Layer
5. Number Systems
6. Data Link Layer
7. Ethernet Switching
8. Network Layer
9. Address Resolution
10. Basic Router Configuration
11. IPv4 and IPv6 Addressing
12. ICMP
13. Transport Layer
14. Application Layer
15. Network Security Fundamentals
16. Build a Small Network

DEPARTMENTAL GUIDELINES *(optional)*

This is the first course in the newly revised Cisco Networking Academy CCNAv7 Routing and Switching curricula. Students will be prepared to take the Cisco CCNA® certification exam after completing CS 171, CS 172 and CS 173.

_____ _____

DIVISION CHAIR APPROVAL **DATE**