SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: CSCO-105 Class Hours: 6 Lab Hours: 3 Lecture. Hours: 3 Dept.: Computer Systems Engineering Technology (CSET)

Course Title: Cisco Introduction to Networks Semester: Fall, Spring Year: 2014

Course Description, Prerequisite, Corequisite:

This course is the first course in the Cisco Academy version 5 CCNA Routing and Switching curriculum. Introduces the architecture, structure, functions, components, and models of the Internet and computer networks. The principles of IP addressing and 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.

Course Objectives	Competencies
On successful completion of this course, the student should be able to: • Understand the features and functions of major computer components. • Understand the commonly used computer measurement terms. • Understand the guidelines for converting a decimal number to a binary number. • Understand the features of physical topologies. • Understand the features of a bus topology.	On successful completion of this course, the student should be able to perform tasks related to the following: • Explain the importance of data networks and the Internet in supporting business communications and everyday activities • Explain how communication works in data networks and the Internet • Recognize the devices and services that are used to support communications across an Internetwork • Use network protocol models to explain the layers of communications in data networks • Explain the role of protocols in data networks • Describe the importance of addressing and naming schemes at various layers of data network

Course Objectives	Competencies
• Understand the features of star topologies. • Understand the features of twisted-pair cable. • Understand the features of coaxial cables. • Understand the features of fiber-optic cables. • Understand the features of Local Area Network (LAN) • Understand the how switching works in a Local Area Network (LAN) environment. • Understand the functions of the Transmission Control Protocol/Internet protocol (TCP/IP) Network layer. • Understand the characteristics of Internet Protocol (IP). • Understand the functions of Internet Control Message Protocol (ICMP).	• Describe the protocols and services provided by the Application layer in the OSI and TCP/IP models and describe how this layer operates in various networks • Analyze the operations and features of the Transport layer protocols and services • Analyze the operations and feature of the Network layer protocols and services and explain the fundamental concepts of routing • Design, calculate, and apply subnet masks and addresses to fulfill given requirements • Describe the operation of protocols at the OSI Data link layer and explain how they support communications • Explain the role of Physical layer protocols and services in supporting communications across data networks • Explain fundamental Ethernet concepts such as media, services, and operation • Employ basic cabling and network designs to connect devices in accordance with stated objectives • Build a simple Ethernet network using routers and switches • Use Cisco CLI commands to perform basic router and switch configuration and verification • Analyze the operations and features of common Application layer protocols such as HTTP, DNS, DHCP, SMTP, Telnet, and FTP • Utilize common network utilities to verify small network operations and analyze data traffic