CIT 105. INTRODUCTION TO NETWORKS (Cisco #1).
Credit Hours: 5
Scheduled hours per week
Lecture: 3
Lab: 2
Other: 0

Catalog Course Description: The first of four courses to prepare the student for the Cisco CCNA certification. Topics covered in this semester include the OSI Model, the TCP/IP Model, IP addressing, sub-netting, data encapsulation, basic network design and troubleshooting.
Pre-requisites: MATH 125 or MATH 126 with grade of C or higher.

Co-requisites: MATH 125 or MATH 126 with grade of C or higher.

Course Learning Outcomes:
- Describe the role of data networking in the global human network
- Identify components of a network (end devices, intermediary devices, and media)
- Identify and describe the seven layers of the OSI Model and their functions
- Describe functions and processes of well-known TCP/IP applications
- Describe client/server network model and peer-to-peer networking model
- Explain how protocols facilitate diverse technologies to communicate with each other
- Describe how the Transport Layer enables multiple devices and applications to communicate over networks at the same time
- Explain the role of Network Layer addressing and understand its hierarchical addressing to allow communication between networks
- Explain the structure of IP addresses and demonstrate the ability to convert between binary and decimal numbers
- Demonstrate understanding of subnetting and variable length subnetting
- Explain the role of Data Link Layer addressing and understand its role in network communication
- Explain the role of the Physical Layer and the purpose of Physical layer signaling and encoding schemes

Topics to be studied:
- LANs, WANs, and Internetworks
- Application, Transport, and Network Protocols
- OSI Model and TCP/IP Model
- IPv4 and IPv6 Addressing and Subnetting
- Ethernet Protocol and LAN Switches
- Cisco Hardware
- Cisco IOS and Command Line Configuration

Relationship of Course to Program or Discipline Learning Outcomes:

X	Identify and describe layers of the OSI and TCP/IP models, and use them effectively in troubleshooting
X	Describe and apply LAN and WAN technologies in wired and wireless environments
	Demonstrate ability to apply workstation and server installation, configuration, management and troubleshooting techniques
X	Demonstrate ability to install, configure, manage, and maintain routing and switching technologies

	Describe and discuss different operating systems and their relationship with hardware, their functions, advantages and disadvantages, and their respective tools and software packages
X	Explain Information Systems and choose appropriate systems based on requirements
X	Describe basic information security and computer ethics

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	X
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	X
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
5/3/2016	

Special requirements of the course:

Students will be required to setup and configure a network utilizing devices, protocols, and other topics studied during the semester.

Additional information:

This course requires a C or better to enroll into CIT 106 (the next Cisco curriculum).

Prepared by: Doug Rhodes

Date: 10/20/2017