FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER:	CET 2600
COURSE TITLE:	Network Fundamentals
PREREQUISITE(S):	CDA 1302 or CET2186 and CDA 1403 or CET1514
COREQUISITE(S):	None
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	4
CONTACT HOUR BREAKDOWN:	
Lecture Discussion:	3
Laboratory: Other _____:	1
FACULTY WORKLOAD POINTS:	3.7
STANDARDIZED CLASS SIZE ALLOCATION:	24

COURSE DESCRIPTION:

This course teaches basic networking concepts. Hands-on laboratories are part of the curriculum.

SUGGESTED TEXT(S):	Network Fundamentals Companion Guide by Cisco Press (latest edition)
IMPLEMENTATION DATE:	Fall Term, 2008 (20091)
REVIEW OR MODIFICATION DATE:	Spring Term, 2003 (20032) Fall Term, 2005 (20061) Fall Term, 2007 (20081) Spring Term, 2008 (20082) Fall Term, 2008 (20091)

	COURSE TOPICS	CONTACT HOURS PER TOPIC
I.	Networking Fundamentals	8
II.	Networking Media Including Basics, Testing, and Using with LANs/WANs	8
III.	Ethernet Fundamentals and technologies,	8
IV.	TCP/IP	8
V.	Subnetting/VLSM	12
VI.	Basic router and switch configuration	8
VII.	Network Technology presentations	2
VII.	Hands-on Testing	6

PROGRAM TITLE: IT Security

COURSE TITLE: Network Fundamentals

CIP NUMBER: 1506120106 AS

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

01.0 Demonstrate an understanding of computer hardware-The student will be able to:

- 01.01 Describe multiple numbering systems used to represent instructions and data, including binary, octal, decimal, and hexadecimal.
- 01.06 Set up and configure computer systems and peripherals.
- 01.08 Install and configure storage devices, controllers, and network interfaces.

02.0 Demonstrate an understanding of networked environments, hardware, and software - The student will be able to:

- 02.01 Discuss fundamental network concepts such as topology, protocols, architecture, and internetworking
- 02.02 Define all layers in the Open Systems Interconnect (OSI) and Transmission Control Protocol/Internetworking Protocol (TCP/IP) network protocol models
- 02.03 Discuss the nature of Internetworking Protocol (IP) addresses and Media Access Control (MAC) addresses, and mapping between protocol addressing schemes
- 02.04 Describe the functions and hardware requirements for current popular network servers for such services as: Domain Name Service (DNS), Dynamic Host Configuration Protocol (DHCP), e-mail, the World Wide Web (WWW), proxy, etc.)
- 02.05 Describe the major functions and hardware requirements of network client hardware components
- 02.06 Describe current link technologies such as twisted-pair, coaxial, fiber optic, and wireless
- 02.07 Describe the major functions of network connectivity hardware, such as hubs, repeaters, bridges, routers, switches, and gateways

03.0 Install and configure secure network systems software and utilities-The student will be able to:

- 03.01 Install and configure current leading system software, drivers, and service packs.
- 03.09 Install and configure client software for network-based applications such as e-mail, Web browsing, terminal emulation, file transfer, group conferencing, database, etc.
- 03.10 Install and configure current popular network servers for such services as: Domain Name Service (DNS), Dynamic Host Configuration Protocol (DHCP), e-mail, the World Wide Web (WWW), proxy service, etc.).

04.0 Demonstrate proficiency with Internet structure, organization, and navigation-The student will be able to:

- 04.01 Describe Internet structure and administration, including such topics as Requests For Comments (RFCs) and the Domain Name System (DNS).
- 04.02 Describe common Internet services and port numbers.
- 04.03 Demonstrate the use of internetworking protocols, including: Hypertext Transfer Protocol (HTTP), File Transfer Protocol (FTP), e-mail protocols such as Simple Mail Transfer Protocol (SMTP) and Post Office Protocol (POP3), Telnet, etc.).

LIST PERFORMANCE STANDARDS ADDRESSED: (Continued)

NUMBER(S): TITLES(S):

04.04 Differentiate between push and pull technologies.
04.05 Demonstrate the use of typical remote access mechanisms such as Telnet.
04.06 Describe the data format and proprietary nature of commonly used Internet file types.
04.07 Demonstrate use of Internet clients and services such as e-mail, Web browsers, search engines, newsgroups, mailing lists, chat rooms, file transfer clients, etc.

07.0 Perform telecommunications and network security activities – The student will be able to:

07.02 Evaluate the security implications involved with the various physical media types such as fiber optics, twisted pair, and wireless communications.
07.03 Describe security concerns with using certain network topologies such as star, bus, mesh, and ring.
07.07 Discuss the security vulnerabilities of the Transmission Control Protocol/Internetworking Protocol (TCP/IP) protocol stack.

14.0 Perform operations and security management practices-The student will be able to:

14.03 Perform backups of critical information within the organization.

Florida State College
At Jacksonville

Course Learning Outcomes & Assessment
For All College Credit Courses

NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

Section 1	
COURSE PREFIX AND NUMBER: **CET 2600**	SEMESTER CREDIT HOURS: **3**
COURSE TITLE: **Network Fundamentals**	

Section 2

TYPE OF COURSE: (Click on the box to check all that apply)

- ☐ **AA Elective**
- ☒ **AS Required Professional Course**
- ☐ **College Prep**
- ☐ **AS Professional Elective**
- ☐ **AAS Required Professional Course**
- ☐ **Technical Certificate**
- ☐ **Other** _____
- ☐ **General Education: (For General Education courses, you must also complete Section 3 and Section 7)**

Section 3 (If applicable)

INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

- ☐ **Communication**
- ☐ **Social & Behavioral Sciences**
- ☐ **Mathematics**
- ☐ **Natural Sciences**
- ☐ **Humanities**

Section 4

INTELLECTUAL COMPETENCIES:

- ☒ **Reading**
- ☒ **Speaking**
- ☒ **Critical Analysis**
- ☒ **Quantitative Skills**
- ☐ **Scientific Method of Inquiry**
- ☒ **Writing**
- ☒ **Listening**
- ☐ **Information Literacy**
- ☐ **Ethical Judgment**
- ☒ **Working Collaboratively**

Section 5 **LEARNING OUTCOMES**		**METHOD OF ASSESSMENT**
•	Use the OSI and TCP/IP models and their associated protocols and applications to explain how data flows in a network.	Written AND hands-on assessments
•	Describe the operation of data networks including LAN and WAN basic operation, basic routing and switching concepts, functions of various network devices, and differences/characteristics of physical and logical network topologies.	Written assessments
•	Distinguish between layer 2 and layer 3 addressing, TCP/IP protocols, and port numbers.	Hands-on and written assessments
•	Without aids of any type, implement an IPv4 VLSM addressing scheme to meet network requirements.	Hands-on and written assessments
•	Create, apply, and verify a basic configuration to a router and a switch.	Hands-on testing
•	Implement a small network including hosts, routers, switches, IP configuration, and cabling.	Hands-on testing
•	Identify and implement common LAN cables.	Hands-on testing

Section 5 (Continued)

Section 5 LEARNING OUTCOMES		METHOD OF ASSESSMENT
•	Perform basic troubleshooting on a multi-LAN environment.	Hands-on testing where instructor inserts problems for students to solve. Two out of three problems is considered mastery.
•	Describe the encapsulation process including the addressing and headers that are added/removed as a packet moves from one network to another network.	Written assessments
•	Recognize and analyze packets obtained from a TCP/IP network.	Hands-on testing
•	Present information regarding a network-related topic based on research.	Presentation (E-portfolio requirement AND Program assessment requirement)

Section 6

Name of Person Completing This Form: Cheryl Schmidt 3/13/2008