

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: CET 2588

COURSE TITLE: Network+ Certification Review

PREREQUISITE(S): None

COREQUISITE(S): None

CREDIT HOURS: 2

CONTACT HOURS/WEEK: 2

CONTACT HOUR BREAKDOWN:

 Lecture Discussion: 2

 Laboratory:

 Other _____:

FACULTY WORKLOAD POINTS: 2

STANDARDIZED CLASS SIZE ALLOCATION: 20

COURSE DESCRIPTION:

This course reviews information contained on the Network+ Certification exam.

SUGGESTED TEXT(S): Mike Meyers Certification Passport Network+
Publisher: McGraw-Hill (latest edition)

IMPLEMENTATION DATE: Fall Term, 2001 (20021)

REVIEW OR MODIFICATION DATE: Fall Term, 2002 (20031)
Fall Term, 2008 (20091) - 2008-21 Proposal

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Network Basics	5
II. OSI Model	5
III. TCP/IP Fundamentals	5
IV. TCP/IP Suite and Utilities	5
V. Network Implementation	5
VI. Network Troubleshooting	5

PROGRAM TITLE: Networking Services Technology

COURSE TITLE: Basic Networking Certification Review

CIP NUMBER: AAS (0507.030401)

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

01.0 DEMONSTRATE UNDERSTANDING OF NETWORKED ENVIRONMENTS - The student will be able to:

- 01.03 Convert numbers among decimal, binary, and hexadecimal representation.
- 01.04 Perform binary arithmetic.
- 01.05 Identify various coding schemes (ASCII, etc.).
- 01.07 Identify several advantages and disadvantages of networked and non-networked environments.
- 01.08 Describe current network environments, such as peer-to-peer and client/server.
- 01.09 Identify and discuss issues (such as security, privacy, redundancy, etc.) related to networked environments.
- 01.10 Identify and discuss issues related to naming conventions for user ids, email, passwords, and network devices.
- 01.11 List and define layers in the OSI and TCP/IP network protocol models.
- 01.12 Identify and describe current relevant IEEE network standards.
- 01.13 Illustrate typical network topologies.
- 01.14 Identify advantages and disadvantages of each topology.
- 01.15 Describe the major functions of LAN hardware protocols such as Ethernet, token ring, FDDI, and arcnet.
- 01.16 Describe LAN software protocols such as IPX/SPX, TCP/IP, and NetBEUI.
- 01.17 Discuss the nature of IP addresses and MAC addresses, and mapping between protocol addressing schemes.
- 01.18 Identify major emerging technologies (such as ATM, VPN, and voice over IP).
- 01.19 Identify and discuss technical issues related to emerging technologies (such as security, bandwidth capability, and gigabit transmission rates).
- 01.20 Discuss the design and function of a storage-area network (SAN).
- 01.21 Design a LAN, including the specification of architecture, hardware, software, etc.
- 01.22 Identify the advantages of VLANs.
- 01.23 Characterize a VLAN implementation.

02.0 DEMONSTRATE UNDERSTANDING OF DATA COMMUNICATIONS - The student will be able to:

- 02.01 Differentiate between telecommunications and data communications.
- 02.02 Describe the main functions of each relevant current standard setting organization (IEEE, TIA, etc.).
- 02.03 Compare and contrast digital communications lines and cable characteristics (e.g. ISDN, DSL, T-1 and T-3).
- 02.04 Describe ATM technology; discuss the functions and applications of this technology.
- 02.05 Describe the functioning of modems, their features and operating characteristics.
- 02.09 Describe current data code systems used in data communication.

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S):

TITLES(S):

- 02.10 Compare and contrast synchronous and asynchronous serial transmission.
- 02.11 Compare and contrast major data communications media in terms of data flow, data codes, and transmission codes.
- 02.12 Define common error detection and correction mechanisms.
- 02.13 Identify LAN access control methods (CSMA/CD, token passing, etc.).
- 02.14 Compare and contrast the major features of the LAN access methods.
- 02.15 Describe asynchronous protocols.
- 02.16 Describe synchronous serial link protocols.
- 02.17 Identify and describe file transfer protocols and methodologies.
- 02.18 Describe data compression methodologies used for file transfer.
- 02.19 Identify evolving issues, such as gigabit transmission requirements, voice over IP, and wireless technologies.

03.0 UNDERSTAND, INSTALL AND CONFIGURE COMPUTER HARDWARE - The student will be able to:

- 03.05 Implement proper procedures for handling and safeguarding equipment.
- 03.07 Analyze the user's needs
- 03.12 Install and configure network hardware components.
- 03.13 Design and implement test procedure.
- 03.15 Configure systems and establish baseline.

04.0 UNDERSTAND, INSTALL AND CONFIGURE COMPUTER SOFTWARE - The student will be able to:

- 04.03 Use an operating system for activities such as data and file management.
- 04.04 Identify current systems utilities and describe their functions.
- 04.05 Use system software to perform routine maintenance tasks such as backup, hard drive defragmentation, etc.
- 04.06 Use operating systems of different brands and platforms.
- 04.07 Use both stand-alone operating systems and network operating systems.
- 04.08 Create, use, and maintain system configuration files.
- 04.19 Install and configure client software for connecting to LANs, WANs, and the Internet (network client, WWW browser, terminal emulation, file transfer, etc.).
- 04.20 Install and configure client software for client/server and network-based applications (e-mail, videoconferencing, database, etc.).
- 04.21 Install applications on a server and configure clients for network access.

05.0 UNDERSTAND, INSTALL AND CONFIGURE NETWORK HARDWARE - The student will be able to:

- 05.01 Describe the major functions of network server hardware components.
- 05.02 Describe the server hardware requirements.
- 05.03 Describe the hardware needed for hosting a Web site.
- 05.04 Identify a variety of specialized servers (e.g. proxy, e-mail, DHCP, Web, etc.) and describe the hardware requirements.
- 05.05 Describe the major functions of network client hardware components.

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S):

TITLES(S):

05.06 Describe client hardware requirements.

05.07 Differentiate between hardware used to implement different topologies such as token ring and Ethernet.

05.08 Recognize and describe current cable technologies such as twisted-pair, coaxial, and fiber optic, and identifying issues associated with plenum versus non-plenum cable plants.

05.09 Describe current wireless technologies such as satellite, microwave, spread spectrum RF, and infrared.

05.10 Identify advantages and disadvantages of wireless and cable technologies.

05.11 Cite appropriate uses of wireless and cable technologies.

05.12 Describe the major functions of network connectivity hardware, such as hubs, repeaters, bridges, routers, switches, and gateways.

05.13 Describe the hardware needed to connect a LAN to the Internet.

05.14 Describe the function of network storage devices and other peripherals (RAID, CD towers, printers, fax machines, scanners, printer/fax/copiers, imaging devices, and document center equipment, etc.).

05.15 Describe the requirements for connecting peripherals directly to a network.

05.22 Test the cable using industry standard measurements.

06.0 UNDERSTAND, INSTALL AND CONFIGURE NETWORK SOFTWARE - The student will be able to:

06.01 Describe the major functions of network server software components.

06.02 Compare and contrast major functions and features of current network operating systems (including directory services).

06.13 Describe the major functions of network client software components.

07.0 PERFORM INTERNETWORKING ACTIVITIES - The student will be able to:

07.01 Describe WAN topologies and MAN topologies.

07.02 Differentiate between WAN topologies and LAN topologies.

07.03 Compare and contrast routing protocols (e.g., RIP, OSFP).

07.05 Identify and describe WAN protocols.

07.06 Explain how the first three layers of the OSI model relate to routing and switching.

07.08 Differentiate among routing, switching and bridging.

07.10 Explain each step necessary for connecting a network to the Internet.

07.11 Explain the differences between connecting to the Internet via a dial-up connection vs. a dedicated connection.

07.12 Identify two major network issues associated with each of Internet, intranet, and extranet.

07.16 Explain the function and purpose of firewalls and firebreaks and their purpose.

07.18 Explain three major security concerns relating to data communications.

08.0 PERFORM NETWORK ADMINISTRATION AND MANAGEMENT ACTIVITIES - The student will be able to:

08.01 Create and manage user accounts based on standard criteria including department, application needs, and permissions.

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S):

TITLES(S):

- 08.08 Perform network monitoring activities to ensure account integrity.
- 08.09 Establish procedures for termination of user accounts.
- 08.13 Describe current encryption standards - public vs. private key, NSA DES, PGP.
- 08.14 Describe the functions and characteristics of firewalls.
- 08.16 Discuss the functions of authentication servers, RADIUS, and VPN.
- 08.17 Establish files backup procedures.
- 08.35 Describe typical WAN links and discuss bandwidth considerations.
- 08.36 Provide examples of WAN backup techniques such as dial-backup that illustrate when they are appropriate.

09.0 PERFORM TROUBLESHOOTING AND MAINTENANCE ACTIVITIES - The student will be able to:

- 09.01 Describe the use and features of diagnostic test equipment.*
- 09.02 Describe effective troubleshooting strategies and techniques to resolve basic hardware, software, and network problems.*
- 09.03 Recognize and resolve basic hardware and software configuration problems.
- 09.04 Eliminate the obvious using techniques such as substitution.
- 09.05 Trace for connectivity issues through each system component.



**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: <u>CET 2588</u>		SEMESTER CREDIT HOURS: <u>2</u>
COURSE TITLE: Basic Networking Certification Review		
Section 2		
TYPE OF COURSE: (Click on the box to check all that apply)		
<input type="checkbox"/> AA Elective	<input type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input checked="" type="checkbox"/> AAS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____		
<input type="checkbox"/> 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:		
<input type="checkbox"/> Communication	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	
Section 4		
INTELLECTUAL COMPETENCIES:		
<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy
<input checked="" type="checkbox"/> Quantitative Skills	<input type="checkbox"/> Ethical Judgment	<input type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Working Collaboratively		
Section 5		
LEARNING OUTCOMES		METHOD OF ASSESSMENT
1	Identify strengths and weaknesses in networking areas.	Practice certification questions
2	Develop questions related to the networking topics.	Discussion forum
3	Provide feedback to other student's questions related to networking areas.	Discussion forum
4	Complete assigned tasks in a timely fashion.	Tests and discussion forum

Section 6

Name of Person Completing This Form: Cheryl Schmidt 3/4/2008