COURSE SYLLABUS
NET440: Connecting Networks

Course Description
This course presents fundamentals in Wide Area Network Topologies, Interfaces, Protocols, Linking technology, Frame encapsulation, Design, internetworking structure and theory, ISDN and ISDN components, configuration, Frame Relay, and Subinterfaces. Students will learn through theory and hands-on application, the process of designing, configuring, installing and implementing a Wide Area Network.

General Course Information

Number of Units/Weeks	08/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	80/0/160
Prerequisite(s)	NET 435
Co-requisites (s)	None
Course Developer(s)	Scott Green, B.A.
Date Approved / Last Review	November 2010 / January 2014

Learning Outcomes
- Demonstrate through discussion an in-depth knowledge of the seven layers of the OSI model
- Describe both verbally and in writing, how data travels up and down the OSI model and the hardware and software associated with each layer
- Describe scaling IP and NAT/PAT configuration
- Demonstrate a knowledge of ISDN components and configuration
- Describe WAN design components
- During hands-on labs, show an understanding of common WAN topologies and protocols
- During hands-on labs, show an understanding of how to configure WAN Frame Relay Encapsulation protocols, HDLC encapsulation, WAN link technology options and Point-to-point protocol.
- During hands-on labs be able to describe and configure subinterfaces

Instructional Methods Employed in this Course
- Lecture and reading assignments
- Hands-on exercises and labs
- Instructor/student demonstrations
- Small group/whole class discussions
- Collaborative work in groups/teams
- Practical application of theory and skills in authentic networking projects

- Build on prior knowledge and experience of students to enhance richness of class activities

Information Resources for this Course

Textbook

Empson, Scott. CCNA Portable Command Guide Third Edition. Indianapolis, IN: Cisco Press, 2013. ISBN -13: 978-1-58720-430-2

Connecting Networks: Companion Guide. Indianapolis, IN: Cisco Press, 2014. ISBN-13: 978-1-58713-332-9. (Full featured textbook for the course.)

Connecting Networks: Companion Guide. Indianapolis, IN: Cisco Press, 2014. ISBN-13: 978-0-13347-650-7. (ebook for the course.)

Connecting Networks: Lab Manual. Indianapolis, IN: Cisco Press, 2014. ISBN-13: 978-1-58713-327-5. (Complete collection of all the course lab exercises.)

Connecting Networks: Course Booklet. Indianapolis, IN: Cisco Press, 2014. ISBN-13: 978-1-58713-330-5. (Offline reading resource; contains only the narrative from the online course, no pictures or diagrams.)

Web Site Readings

Subnetting

Classless Inter-Domain Routing
http://en.wikipedia.org/wiki/Classless_Inter-Domain_Routing
(Retrieved May 13, 2010)

CIDR Notation
http://en.wikipedia.org/wiki/CIDR_notation
(Retrieved May 13, 2010)

IP Variable Length Subnet Masking (VLSM)
http://www.tcpipguide.com/free/t_IPVariableLengthSubnetMaskingVLSM-3.htm
(Retrieved May 13, 2010)

IP Addressing and Subnetting for New Users
http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a00800a67f5.shtml
(Retrieved May 13, 2010)

Subnetting Made Easy

http://www.faqshop.com/misc/default.htm?http://faqshop.com/misc/miscarts/sn%20made%20easy.htm
(Retrieved May 10, 2010)
Subnetting Made Easy and Other Cisco Tidbits

http://subnettingmadeeasy.blogspot.com/
(Retrieved May 10, 2010)

TechRepublic: IP Subnetting Made Easy
http://articles.techrepublic.com.com/5100-10878_11-6089187.html
(Retrieved May 10, 2010)

Unmasking the Subnet Mask for the CCNA Exam
http://www.dummies.com/how-to/content/unmasking-the-subnet-mask-for-the-ccna-exam.html
(Retrieved May 10, 2010)

YouTube: Superstar Insider IP Subnetting Made Easy
http://www.youtube.com/watch?v=AKl-fpnnqhQ
(Retrieved May 10, 2010)

OSI Model

The 7 Layers of the OSI Model
http://www.webopedia.com/quick_ref/osi_layers.asp
(Retrieved May 10, 2010)

About.com: OSI Model Reference Guide
http://compnetworking.about.com/cs/designosimodel/a/osimodel.htm
(Retrieved May 10, 2010)

Cisco: Internetworking Basics
http://www.cisco.com/en/US/docs/internetworking/technology/handbook/Intro-to-Internet.html
(Retrieved May 10, 2010)

OSI Model
http://en.wikipedia.org/wiki/OSI_model
(Retrieved May 10, 2010)

OSI Model
http://www.topbits.com/osi-model.html
(Retrieved May 10, 2010)

OSI Model Images
http://www.google.com/images?q=osi+model&rls=com.microsoft:en-us:IE-SearchBox&oe=UTF-8&rlz=1I7GGLG_en&um=1&ie=UTF-8&source=univ&ei=IYfoS8CCC4ycsgPEs9iBCA&sa=X&oi=image_result_group&ct=title&resnum=4&ved=0CD0QsAQwAw
(Retrieved May 10, 2010)

Network Topology

About.com: Network Topologies
http://compnetworking.about.com/od/networkdesign/a/topologies.htm
(Retrieved May 10, 2010)

Network Topology
http://en.wikipedia.org/wiki/Network_topology
(Retrieved May 10, 2010)

Network Topology Images
http://www.google.com/images?q=network+topology&rls=com.microsoft:en-us:IE-SearchBox&oe=UTF-8&rlz=1I7GGLG_en&um=1&ie=UTF-8&source=univ&ei=yojoS66eJpGisgPXg5DVBw&sa=X&oi=image_result_group&ct=title&resnum=4&ved=0CD0QsAQwAw
(Retrieved May 10, 2010)

Networking Tutorials: Network Topologies
http://www.networktutorials.info/topology.html
(Retrieved May 10, 2010)

Routing Protocols

Distant Vector vs. Link State Routing
http://www.inetdaemon.com/tutorials/internet/ip/routing/dv_vs_ls.shtml
(Retrieved May 13, 2010)

Distant-Vector Routing Protocol
http://en.wikipedia.org/wiki/Distance-vector_routing_protocol
(Retrieved May 13, 2010)

Distance Vector Routing Protocol
http://www.topbits.com/distance-vector-routing-protocol.html
(Retrieved May 13, 2010)

Enhanced Interior gateway Routing Protocol
http://en.wikipedia.org/wiki/Enhanced_Interior_Gateway_Routing_Protocol
(Retrieved May 13, 2010)

Enhanced Interior Gateway Routing Protocol (EIGRP) Introduction
http://www.cisco.com/en/US/products/ps6630/products_ios_protocol_option_home.html
Retrieved May 13, 2010)

Link-state Routing Protocol
http://en.wikipedia.org/wiki/Link-state_routing_protocol
(Retrieved May 13, 2010)

Networking 101: Understanding RIP Routing

http://www.enterprisenetworkingplanet.com/netsp/article.php/3609151/Networking-101-Understanding-RIP-Routing.htm
(Retrieved May 13, 2010)

Open Shortest Path First
http://en.wikipedia.org/wiki/Open_Shortest_Path_First
(Retrieved May 13, 2010)

OSPF
http://www.rhyshaden.com/ospf.htm
(Retrieved May 13, 2010)

Routing Information Protocol
http://en.wikipedia.org/wiki/Routing_Information_Protocol
(Retrieved May 13, 2010)

Routing Information Protocol (RIP)
http://www.cisco.com/en/US/docs/internetworking/technology/handbook/RIP.html
(Retrieved May 13, 2010)

What You Need to Know About EIGRP
http://www.setup32.com/network-administration/networking/know-eigrp.php
(Retrieved May 13, 2010)

IP Theory
Network History
http://www.nethistory.info/History%20of%20the%20Internet/origins.html
(Retrieved May 10, 2010)

Trainsignal: Free TCP/IP and Networking Fundamentals Training Video
http://www.trainsignaltraining.com/free-video-training/free-tcpip-networking-fundamentals-training-videos/
(Retrieved May 10, 2010)

Switch Configuration
Switch Configuration
http://www.snt.co.uk/courseware/Configuring_switches.pdf
(Retrieved November 16, 2010)

Cisco Switch Configuration
http://www.tech-faq.com/cisco-switch-configuration.html
(Retrieved November 16, 2010)

Basics of Cisco Switch Administration
http://www.petri.co.il/csc_basics_of_cisco_switch_administration_01.htm
(Retrieved November 16, 2010)

Basics Switch Configuration (Cisco Catalyst 2950T)
http://www.youtube.com/watch?v=pp8KqXgfvlQ
(Retrieved November 16, 2010)

Cisco Switch Configuration
http://video.google.com/videoplay?docid=8608134916159965970#
(Retrieved November 16, 2010)

VLAN'S

The Basic Definition
HTTP://WWW.TECH-FAQ.COM/VLAN.HTML
(Retrieved November 16, 2010)

What is a VLAN? How to Setup a VLAN on a Cisco Switch
http://www.petri.co.il/csc_setup_a_vlan_on_a_cisco_switch.htm
(Retrieved November 16, 2010)

How LAN Switches Work
http://computer.howstuffworks.com/lan-switch16.htm
(Retrieved November 16, 2010)

VLAN and Trunking
http://www.ciscopress.com/articles/artilce.asp?p=29803
(Retrieved November 16, 2010)

VTP

VLAN Trunking Protocol
http://en.wikipedia.org/wiki/VLAN_Truncking_Protocol
(Retrieved November 16, 2010)

Understanding VLAN Trunking Protocol (VTP)
http://www.cisco.com/en/US/tech/tk389/tk689/technologies_tech_note09186a008
0094c52.shtml
(Retrieved November 16, 2010)

Cisco VTP:VLAN Trunking Protocol
http://www.javvin.com/protocolVTP.html
(Retrieved November 16, 2010)

How to configure VTP Client and Server?
http:/ http://www.computeronlinetips.com/Switch-configuration-tips/configure-
VTP-client.html
(Retrieved November 16, 2010)

STP

Understanding and Configuring Spanning Tree Protocol on Catalyst Switches
http://www.cisco.com/en/US/tech/tk389/tk621/technologies_configuration_example09186a008009467c.shtml
(Retrieved November 16, 2010)

Spanning Tree Protocol
http://en.wikipedia.org/wiki/Spanning_tree_protocol
(Retrieved November 16, 2010)

Understanding Spanning Tree Protocol Topology Changes
http://www.cisco.com/en/US/tech/tk389/tk621/technologies_tech_note09186a0080094797.shtml
(Retrieved November 16, 2010)

Chapter 7: Spanning Tree Protocol (STP)
https://learningnetwork.cisco.com/docs/DOC-6597
(Retrieved November 16, 2010)

Inter-VLAN Routing

What is VLAN Routing?
http://www.dell.com/downloads/global/products/pwcnt/en/app_note_38.pdf
(Retrieved November 16, 2010)

How to Configure Inter-VLAN Routing on a Cisco Router
http://www.routergeek.net/content/view/43/37/
(Retrieved November 16, 2010)

InterVLAN Routing
http://ftp.hp.com/pub/networking/software/ProCurve-SR-InterVLAN-Config-Guide.pdf
(Retrieved November 16, 2010)

Cisco CCNA Videos – Inter-VLAN Routing
http://www.youtube.com/watch?v=pd6YQvDSXUg
(Retrieved November 16, 2010)

How to create a VLAN on a Cisco Switch
http://www.youtube.com/watch?v=edCzr5L4Zec&feature=related
(Retrieved November 16, 2010)

PPP

Point-to-Point Protocol
http://en.wikipedia.org/wiki/Point-to-Point_Protocol
(Retrieved November 22, 2010)
PPP

http://www.webopedia.com/TERM/P/PPP.html
(Retrieved November 22, 2010)

Frame Relay

Frame Relay
http://en.wikipedia.org/wiki/Frame_Relay
(Retrieved November 22, 2010)

Frame Relay
http://www.protocols.com/pbook/frame.htm
(Retrieved November 22, 2010)

Frame Relay
http://searchenterprisewan.techtarget.com/definition/frame-relay
(Retrieved November 22, 2010)

Cisco CCNA Videos – Getting to Know Frame Relay
http://www.youtube.com/watch?v=GCCpEM2CoGY
(Retrieved November 22, 2010)

Access Control Lists ACL's

Access Control Lists
http://en.wikipedia.org/wiki/Access_control_list
(Retrieved November 22, 2010)

Access Control Lists: Overview and Guidelines
http://www.cisco.com/en/US/docs/ios/11_3/security/configuration/guide/scacls.html
(Retrieved November 22, 2010)

Configuring IP Access Lists
http://www.cisco.com/en/US/products/sw/secursw/ps1018/products_tech_note09186a00800a5b9a.shtml
(Retrieved November 22, 2010)

Cisco IOS Access List: 10 Things You Should Know
http://articles.techrepublic.com.com/5100-10878_11-5731134.html
(Retrieved November 22, 2010)

ACL Configuration on a Cisco Router
http://www.youtube.com/watch?v=VKDWpyYJTY4
(Retrieved November 22, 2010)

Network Address Translation
Network Address Translation
http://en.wikipedia.org/wiki/Network_address_translation
(Retrieved November 22, 2010)

How Network Address Translation Works
http://www.howstuffworks.com/nat.htm
(Retrieved November 22, 2010)

IPv6
IPV6
http://en.wikipedia.org/wiki/IPv6
(Retrieved November 22, 2010)

All the IPV6 Resources You Need
http://ipv6.net/
(Retrieved November 22, 2010

Table/Topics & Assignments

Types of Assignments:

Lecture -
Considered Lecture Hours

Classroom Discussion -
Considered Lecture Hours

In Class Critique -
Considered Lecture Hours

Delivering Oral Presentations -
Considered Lecture Hours

In Class (IC) Exercise -
Considered Lecture Hours

Reading -
Considered Homework (HW), work done outside of class

WebClass lesson (non-online courses) -
Considered HW, work done outside of class

Lab Work -
Considered Lab Hours

Quiz, Midterm or Final -
Considered Lecture Hours

Week 1						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 1A	Hierarchical Network Design	7	--	--	--	
HW 1A	Course Pretest (40 Questions)	--	--	2	--	Week 2
HW 1B	Read Chapter 1 (35 pages) Evaluated by HW 1I & EXAM 1A	--	--	3.5	--	Week 2
HW 1C	Activity 1.1.2.6 – Identify Hierarchical Network Characteristics	--	--	.5	--	Week 2
HW 1D	Activity 1.2.1.3 – Identify Modules in a Network Design	--	--	.5	--	Week 2
HW 1E	Activity 1.2.2.6 – Identify Modules of the Cisco Enterprise Architecture	--	--	.5	--	Week 2
HW 1F	Activity 1.3.2.5 – Identify Evolving Network Architecture Terminology	--	--	.5	--	Week 2
HW 1G	PT 1.4.1.2 – Skills Integration Challenge - OSPF	--	--	2	2	Week 2
HW 1H	PT 1.4.1.3 – Skills Integration Challenge - EIGRP	--	--	2	2	Week 2
HW 1I	Chapter 1 Quiz (15 Questions)	--	--	1		Week 2
EXAM 1A	Chapter 1 Exam	1	--	3	5	Week 2
Total Week 1		8	0	15.5	9	

Week 2						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 2A	Connecting to the WAN	7	--	--	--	
HW 2A	Read Chapter 2 (35 Pages) Evaluated by HW 2H & Exam 2A	--	--	3.5	--	Week 3
HW 2B	Activity 2.1.1.8 – Identify WAN Topologies	--	--	.5	--	Week 3
HW 2C	Activity 2.1.2.6 – Identify WAN Terminology	--	--	.5	--	Week 3

HW 2D	Activity 2.2.1.3 – Classify WAN Access Options	--	--	.5	--	Week 3
HW 2E	Activity 2.2.2.9 – Identify Private WAN Infrastructure Terminology	--	--	.5	--	Week 3
HW 2F	Activity 2.2.3.6 – Identify Public WAN Infrastructure Terminology	--	--	.5	--	Week 3
HW 2G	Lab 2.2.4.3 – Researching WAN Technologies	--	--	1	--	Week 3
HW 2H	Chapter 2 Quiz (14 Questions)	--	--	1	--	Week 3
EXAM 2A	Chapter 2 Exam	1	--	3	5	Week 3
Total Week 2		8	0	11	5	

Week 3

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 3A	Point-to-Point Connections	4	--	--	--	
IC EX 3A	Lab 3.3.2.8 – Configuring PPP and Authentication	1.5	--	--	--	
IC EX 3B	Lab 3.4.1.5 – Troubleshooting Basic PPP with Authentication	1.5	--	--	--	
HW 3A	Read Chapter 3 (40 Pages) Evaluated by HW 3J & Exam 3A	--	--	4	--	Week 4
HW 3B	Activity 3.1.1.11 – Identify the Serial Communication Terminology	--	--	.5	--	Week 4
HW 3C	Activity 3.1.2.6 Syntax Checker – Troubleshooting a Serial Interface	--	--	.5	--	Week 4
HW 3D	PT 3.1.2.7 – Skills Integration Challenge – Troubleshooting Serial Interfaces	--	--	1	--	Week 4
HW 3E	Activity 3.2.2.5 – Identify PPP Features and Operations	--	--	.5	--	Week 4
HW 3F	Activity 3.2.3.6 – Identify the Steps in	--	--	.5	--	Week 4

	the LCP Link Negotiation Process					
HW 3G	PT 3.3.2.7 – Configuring PAP and CHAP Authentication	--	--	1.5	--	Week 4
HW 3H	PT 3.4.1.4 – Troubleshooting PPP with Authentication	--	--	1.5	--	Week 4
HW 3I	PT 3.5.1.2 – Skills Integration Challenge	--	--	2	2	Week 4
HW 3J	Chapter 3 Quiz (14 Questions)	--	--	1	--	Week 4
EXAM 3A	Chapter 3 Exam	1	--	5	--	Week 4
Total Week 3		8	0	18	--	

Week 4

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 4A	Frame Relay	4	--	--	--	
IC EX 4A	Lab 4.2.2.7 – Configuring Frame Relay and Subinterfaces	1.5	--	--	--	
IC EX 4B	Lab 4.3.1.6 – Troubleshooting Basic Frame Relay	1.5	--	--	--	
HW 4A	Read Chapter 4 (40 Pages) Evaluated by HW 4K & Exam 4A	--	--	4	--	Week 5
HW 4B	Activity 4.1.1.5 – Identify Frame Relay Terminology and Concepts	--	--	.5	--	Week 5
HW 4C	Activity 4.1.2.10 – Map the Virtual Circuit to the Port Number	--	--	.5	--	Week 5
HW 4D	Activity 4.1.2.11 – Match Frame Relay Fields to the Definition	--	--	.5	--	Week 5
HW 4E	Activity 4.1.2.12 – Identify LMI Terminology and Concepts	--	--	.5	--	Week 5
HW 4F	Activity 4.1.3.5 – Identify Frame Relay Bandwidth and Flow Control Terminology	--	--	.5	--	Week 5
HW 4G	PT 4.2.1.4 – Configuring Static	--	--	1.5	--	Week 5

	Frame Relay Maps					
HW 4H	Activity 4.2.2.5 – Identify Frame Relay Bandwidth and Flow Control Terminology	--	--	.5	--	Week 5
HW 4I	PT 4.2.2.6 – Configuring Frame Relay Point-to-Point Subinterfaces	--	--	1	--	Week 5
HW 4J	PT 4.4.1.2 – Skills Integration Challenge	--	--	1.5	2	Week 5
HW 4K	Chapter 4 Quiz (13 Questions)	--	--	1		Week 5
EXAM 4A	Chapter 4 Exam	1	--	5	5	Week 5
Total Week 4		8	0	17	7	

Week 5

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 5A	Network Address Translation for IPv4	3	--	--	--	
IC EX 5A	Lab 5.2.2.6 – Configuring Dynamic and Static NAT	1.3	--	--	--	
IC EX 5B	Lab 5.2.3.7 – Configuring Port Address Translation	1.2	--	--	--	
IC EX 5C	Lab 5.3.1.5 – Troubleshooting NAT Configurations	1.5	--	--	--	
HW 5A	Read Chapter 5 (40 Pages) Evaluated by HW 5L Exam 5A	--	--	4	--	Week 6
HW 5B	Activity 5.1.1.6 – Identify the NAT Terminology	--	--	.5	--	Week 6
HW 5C	PT 5.1.2.6 – Investigating NAT Operations	--	--	1	--	Week 6
HW 5D	PT 5.2.1.4 – Configuring Static NAT	--	--	1	--	Week 6
HW 5E	PT 5.2.2.5 – Configuring Dynamic NAT	--	--	1	--	Week 6
HW 5F	Activity 5.2.3.5 – Identify the Address Information of Each Hop	--	--	.5	--	Week 6
HW 5G	PT 5.2.3.6 –	--	--	1	--	Week 6

	Implementing Static and Dynamic NAT					
HW 5H	PT 5.2.4.4 – Configuring Port Forwarding on a Linksys Router	--	--	1	--	Week 6
HW 5I	PT 5.3.1.4 – Verifying and Troubleshooting NAT Configurations	--	--	1	--	Week 6
HW 5J	PT 5.4.1.2 – Skills Integration Challenge	--	--	2	2	Week 6
HW 5K	Section 5.2 Quiz (5 Questions)	--	--	1	--	Week 6
HW 5L	Chapter 5 Quiz (15 Questions)	--	--	1	--	Week 6
EXAM 5A	Chapter 5 Exam	1	--	.5	5	Week 6
Total Week 5		8	0	15.5	7	

Week 6

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 6A	Broadband Solutions	5.5	--	--	--	
IC EX 6A	Lab 6.3.2.3 – Configuring a Router as a PPPoE Client for DSL Connectivity	1.5	--	--	--	
HW 6A	Read Chapter 6 (40 Pages) Evaluated by HW 6I & Exam 6A	--	--	4	--	Week 7
HW 6B	Activity 6.1.1.6 – Benefits of Teleworking	--	--	.5	--	Week 7
HW 6C	Activity 6.1.2.3 – Classify Requirements for Teleworker Connectivity	--	--	.5	--	Week 7
HW 6D	Activity 6.2.1.5 – Identify Cable Terminology	--	--	.5	--	Week 7
HW 6E	Activity 6.2.2.4 – Identify DSL Terminology	--	--	.5	--	Week 7
HW 6F	Activity 6.2.3.3 – Identify Broadband Wireless Terminology	--	--	.5	--	Week 7
HW 6G	PT 6.2.3.7 – Configuring Multiarea OSPFv3	--	--	1.5	--	Week 7
HW 6H	Lab 6.2.4.2 –	--	--	2	--	Week 7

	Researching Broadband Internet Access Technologies					
HW 6I	Activity 6.3.2.2 – Syntax Checker – Configuring PPPoE	--	--	.5	--	Week 7
HW 6J	Chapter 6 Quiz (14 Questions)	--	--	1	--	Week 7
EXAM 6A	Chapter 6 Exam	1	--	5	5	Week 7
Total Week 6		8	0	16.5	5	

Week 7

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 7A	Securing Site-to-Site Connectivity	4.5	--	--	--	
IC EX 7A	Lab 7.2.2.5 – Configuring a Point-to-Point GRE VPN Tunnel	1.5	--	--	--	
HW 7A	Read Chapter 7 (30 Pages) Evaluated by HW 7I, Exam 7A & 7B	--	--	3	--	Week 8
HW 7B	Activity 7.1.1.3 – Identify the Benefits of VPNs	--	--	.5	--	Week 8
HW 7C	Activity 7.1.2.3 – Compare Types of VPNs	--	--	.5	--	Week 8
HW 7D	PT 7.1.2.4 – Configuring VPNs	--	--	1.5	--	Week 8
HW 7E	Activity 7.2.1.3 – Identify GRE Characteristics	--	--	.5	--	Week 8
HW 7F	PT 7.2.2.3 – Configuring GRE	--	--	1	--	Week 8
HW 7G	PT 7.2.2.4 – Troubleshooting GRE	--	--	1	--	Week 8
HW 7H	Activity 7.3.2.7 – Identify IPsec Terminology and Concepts	--	--	.5	--	Week 8
HW 7I	PT 7.3.2.8 – Configuring GRE over IPsec	--	--	1	--	Week 8
HW 7J	Activity 7.4.1.4 – Compare Cisco SSL VPN Solutions	--	--	.5	--	Week 8
HW 7K	Activity 7.4.2.5 – Identify Remote-	--	--	.5	--	Week 8

	Access Characteristics					
HW 7L	PT 7.5.1.2 – Skills Integration Challenge	--	--	2	--	Week 8
HW 7M	Section 7.3 Quiz - IPSEC	--	--	1	--	Week 8
HW 7N	Chapter 7 Quiz (15 Questions)	--	--	1	--	Week 8
EXAM 7A	Chapter 7 Practice Skills Assessment	1	--	3	--	Week 8
EXAM 7B	Chapter 7 Exam	1	--	5	5	Week 8
Total Week 7		8	0	22.5	7	

Week 8

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 8A	Monitoring the Network	3	--	--	--	
IC EX 8A	Lab 8.1.2.6 – Configuring Syslog and NTP	1.5	--	--	--	
IC EX 8B	Lab 8.2.2.4 – Configuring SNMP	1.5	--	--	--	
IC EX 8C	Lab 8.3.3.3 – Collecting and Analyzing NetFlow Data	1	--	--	--	
HW 8A	Read Chapter 8 (35 Pages) Evaluated by HW 8G Exam 8A	--	--	3.5	--	Week 9
HW 8B	PT 8.1.2.5 – Configuring Syslog and NTP	--	--	1	--	Week 9
HW 8C	Activity 8.2.1.7 – Identify Characteristics of SNMP Versions	--	--	.5	--	Week 9
HW 8D	Lab 8.2.1.8 – Researching Network Monitoring Software	--	--	2	--	Week 9
HW 8E	Activity 8.3.1.4 – Comparing SNMP and NetFlow	--	--	.5	--	Week 9
HW 8F	PT 8.3.1.2 – Skills Integration Challenge	--	--	1.5	2	Week 9
HW 8G	Chapter 8 Quiz (13 Questions)	--	--	1	--	Week 9
EXAM 8A	Chapter 8 Exam	1	--	5	--	Week 9
Total Week 8		8	--	15	--	

Week 9						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 9A	Troubleshooting the Network	8	--	--	--	
HW 9A	Read Chapter 9 (45 Pages) Evaluated by HW 9H & Exam 9A	--	--	--	--	Week 10
HW 9B	Activity 9.0.1.2 – Network Breakdown	--	--	--	--	Week 10
HW 9C	Activity 9.1.1.6 – Identify Benefits for Establishing a Network Baseline	--	--	.5	--	Week 10
HW 9D	Activity 9.1.1.7 – Identify Commands Used for Measuring Data	--	--	.5	--	Week 10
HW 9E	PT 9.1.1.8 – Troubleshooting Challenge – Documenting the Network	--	--	1.5	--	Week 10
HW 9F	Activity 9.1.2.4 – Identify Commands for Gathering Symptoms	--	--	.5	--	Week 10
HW 9G	Activity 9.1.3.5 – Troubleshooting Methods	--	--	.5	--	Week 10
HW 9H	Activity 9.2.1.5 – Identify Common Troubleshooting Tools	--	--	.5	--	Week 10
HW 9I	Activity 9.2.2.7 – Identify the OSI Layer Associated with a Network Issue	--	--	.5	--	Week 10
HW 9J	Activity 9.2.3.11 – Identify Commands to Troubleshoot a Network Issue	--	--	.5	--	Week 10
HW 9K	PT 9.2.3.12 – Troubleshooting Enterprise Networks 1	--	--	1	--	Week 10
HW 9L	PT 9.2.3.13 – Troubleshooting Enterprise Networks 2	--	--	1	--	Week 10
HW 9M	PT 9.2.3.14 – Troubleshooting	--	--	1	--	Week 10

	Enterprise Networks 3					
HW 9N	PT 9.2.3.15 – Troubleshooting Enterprise Networks 4 – Using Documentation to Solve Issues	--	--	1	--	Week 10
HW 9O	Chapter 9 Quiz (10 Questions)	--	--	1	--	Week 10
EXAM 9A	Chapter 9 Exam	1	--	5	5	Week 10
Total Week 9		8	0	21.5	5	

Week 10

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
EXAM 10A	Practice Final Exam	1	--	3	1	Week 10
EXAM 10B	Final Exam	2	--	4	10	Week 10
EXAM 10C	Packet Tracer Final Exam	2	--	6	10	Week 10
EXAM 10D	Practical Exam	3	--	6	15	Week 10
EXAM 10E	Cert Practice Exam (ICND2)	--	--	3	5	Week 10
Total Week 10		8	0	22	41	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1	Hierarchical Network Design	8	0	15.5
2	Connecting to the WAN	8	0	11
3	Point-to-Point Connections	8	0	18
4	Frame Relay	8	0	17
5	Network Address Translation for IPv4	8	0	15.5
6	Broadband Solutions	8	0	16.5
7	Securing Site-to-Site Connectivity	8	0	22.5
8	Monitoring the Network	8	0	15
9	Troubleshooting the Network	8	0	21.5
10	Final Exams	8	0	22
Total		80	0	174.5

Table/Point Breakdown

Week	Assignment	Possible Points	Percent of Grade
1	ELP 1G, Skills Integration Challenge - OSPF	2	2%

1	ELP 1H, Skills Integration Challenge - EIGRP	2	2%
1	EXAM 1A, Chapter 1 Exam	5	5%
2	EXAM 2A, Chapter 2 Exam	5	5%
3	ELP 3I, Skills Integration Challenge	2	2%
3	EXAM 3A, Chapter 3 Exam	5	5%
4	ELP 4J, Skills Integration Challenge	2	2%
4	EXAM 4A, Chapter 4 Exam	5	5%
5	ELP 5J, Skills Integration Challenge	2	2%
5	EXAM 5A, Chapter 5 Exam	5	5%
6	EXAM 6A, Chapter 5 Exam	5	5%
7	ELP 7L, Skills Integration Challenge	2	2%
7	EXAM 7A, Chapter 7 Exam	5	5%
8	EXAM 8A, Chapter 8 Exam	5	5%
8	ELP 8F, Skills Integration Challenge	2	2%
9	EXAM 9A, Chapter 9 Exam	5	5%
10	EXAM 10A, Practice Final Exam	1	1%
10	EXAM 10B, Final Exam	10	10%
10	EXAM 10C, Packet Tracer Final Exam	10	10%
10	EXAM 10D, Practical Exam	15	15%
10	EXAM 10E, Cert Practice Exam (ICND2)	5	5%
Total		100	100%

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:

Percent	Letter Grade	Grade Points
94-100	A	4
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
N/A	I	0
N/A	W	0
N/A	AU	0
N/A	TR	0
N/A	WV	0

Legend	
CR = Credit	NC = No Credit
I = Incomplete	W = Course Withdrawal
AU = Audit	TR = Transfer Credit

WV = Waiver	

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.