

ILLINOIS VALLEY COMMUNITY COLLEGE



COURSE OUTLINE

DIVISION: Workforce Development

COURSE: CSN 2260; Network Routing

Date: Spring 2014

Credit Hours: 3

Prerequisite(s): CSN 1225

Delivery Method:

<input checked="" type="checkbox"/> Lecture	2 Contact Hours (1 contact = 1 credit hour)
<input type="checkbox"/> Seminar	0 Contact Hours (1 contact = 1 credit hour)
<input checked="" type="checkbox"/> Lab	2 Contact Hours (2 contact = 1 credit hour)
<input type="checkbox"/> Clinical	0 Contact Hours (3 contact = 1 credit hour)
<input type="checkbox"/> Online	
<input type="checkbox"/> Blended	

Offered: Fall Spring Summer

IAI Equivalent –**Only for Transfer Courses**–go to <http://www.itransfer.org>.

CATALOG DESCRIPTION:

An introductory course to routing in local-area networks (LANs) and wide-area networks (WANs). Cisco routers and IOS basics will be covered. Emphasis will be placed on the use of problem-solving to solve LAN and WAN networking problems.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

Upon completion of the course, the student will be able:

[Choose those goals that apply to this course.]

- To apply analytical and problem solving skills to personal, social and professional issues and situations.
- To communicate orally and in writing, socially and interpersonally.
- To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
- To understand and use contemporary technology effectively and to understand its impact on the individual and society.
- To work and study effectively both individually and in collaboration with others.
- To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
- To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
- To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

Upon completion of the course, the student will be able to:

1. understand router basics.
2. understand subnetting and will be able to define host ID's for a subnet.
3. learn the basic Cisco IOS commands for startup and configuration
4. identify and use routing protocols
5. understand the role a router plays in NAT, DNS, and DHCP
6. understand access lists.

Outcome 1 – Upon completion of the course, the student will be able to understand router basics.

Competency 1.1 – the student will understand the role routers play in a LAN/WAN environment.

Competency 1.2 – the student will understand when to use routers over other devices such as switches.

Competency 1.3 – the student will understand the benefits of routing.

Outcome 2 – Upon completion of the course, the student will be able to understand subnetting and will be able to define host ID's for a subnet.

Competency 2.1 – the student will understand the IPv4 and IPv6 addressing scheme.

Competency 2.2 – the student will understand how to subdivide IP classes

Outcome 3 – Upon completion of the course, the student will be able to learn the basic Cisco IOS commands for startup and configuration.

Competency 3.1 – the student will understand the router startup and configuration files.

Competency 3.2 – the student will understand how to test connectivity of the router

Competency 3.3 – the student will understand the basic Cisco IOS commands (boot, backup, restore, upgrade IOS)

Outcome 4 – Upon completion of the course, the student will be able to identify and use routing protocols

Competency 4.1 – the student will understand RIP, IGRP, EIGRP, and OSPF protocols

Competency 4.2 – the student will understand the difference between classful and classless routing protocols.

Outcome 5 – Upon completion of the course, the student will be able to understand the role a router plays in NAT, DNS, and DHCP.

Competency 5.1 – the student will understand NAT and be able to configure the router to use NAT.

Competency 5.2 – the student will understand DNS and be able to configure the router to use DNS.

Competency 5.3 – the student will understand DHCP and be able to configure the router to use DHCP.

Outcome 6 – Upon completion of the course, the student will be able to understand access lists.

Competency 6.1 – the student will understand access list usage and rules.

Competency 6.2 – the student will understand standard and extended IP access lists.

COURSE TOPICS AND CONTENT REQUIREMENTS:

Review of Network Devices

Review of TCP/IP

IP Addressing

Cisco Routers and IOS Basics

Router Startup and Configuration

Routing Protocols

Advanced Routing Protocols

Network Services

Access Lists

INSTRUCTIONAL METHODS:

Classroom lecture and demonstration

Student hands-on lab exercises

Simulation

INSTRUCTIONAL MATERIALS:

CCNA Guide to Cisco Networking Fundamentals, 4th Edition

Kelly Cannon, Kelly Caudle, Anthony V. Chiarella

Simulation Software - CCNA LabConnection (ISBN-10: 1418837172 | ISBN-13: 9781418837174)

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

Students will successfully complete all assigned hands-on activities performed during class/lab.

Students will successfully complete quizzes on the topics discussed.

Students will successfully complete a midterm and final written exam covering terminology and concepts.

Students will successfully complete a midterm and final hands-on exam cover tasks assigned.

OTHER REFERENCES

Course Competency/Assessment Methods Matrix

CSN 2260; Network Routing		Assessment Options																															
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment	
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D							
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																	
Outcome 1 – Upon completion of the course, the student will be able to understand router basics.					X			X	X																								X
Outcome 2 – Upon completion of the course, the student will be able to understand subnetting and will be able to define host ID's for a subnet.					X			X	X																								X
Outcome 3 – Upon completion of the course, the student will be able to learn the basic Cisco IOS commands for startup and configuration.					X			X	X																								X
Outcome 4 – Upon completion of the course, the student will be able to identify and use routing protocols					X			X	X																								X
Outcome 5 – Upon completion of the course, the student will be able to understand the role a router plays in NAT, DNS, and DHCP.					X			X	X																								X
Outcome 6 – Upon completion of the course, the student will be able to understand access lists.					X			X	X																								X