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:
- Lecture: 2 Contact Hours (1 contact = 1 credit hour)
- Lab: 2 Contact Hours (2 contact = 1 credit hour)

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:
Kelly Cannon, Kelly Caudle, Anthony V. Chiarella
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 covering tasks assigned. 

OTHER REFERENCES
## Course Competency/Assessment Methods Matrix

### CSN 2260; Network Routing

For each competency/outcome place an “X” below the method of assessment to be used.

<table>
<thead>
<tr>
<th>Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.</th>
<th>Assessment Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1 – Upon completion of the course, the student will be able to understand router basics.</td>
<td>D</td>
</tr>
<tr>
<td>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.</td>
<td>D</td>
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