



ANTELOPE VALLEY COLLEGE

Academic Affairs
Course Outline of Record

Academic Affairs Only

<input type="checkbox"/>	New Course
<input type="checkbox"/>	Effective Date (for articulation)
<input checked="" type="checkbox"/>	COR Revision 5/13/2010
<input type="checkbox"/>	Pre Req/Advisories
<input checked="" type="checkbox"/>	Other Changes Title
<input checked="" type="checkbox"/>	SLOs 4/10/2008

COURSE SUBJECT & NUMBER: CA 176

COURSE NAME: *Windows Server Networking

COURSE UNITS: 3 **COURSE HOURS:** 4 hours weekly

COURSE REQUISITES: *(Follow format of similar courses found in the college catalog.)*

Advisory: Eligibility for ENGL 099, READ 099, and MATH 102

Prerequisite: Completion of CA 175

COURSE DESCRIPTION: *(Write a short paragraph providing an overview of topics covered. Be sure to identify target audience--transfer, major, GE, degree/certificate, etc. If repeatable, state the number of times at end of description as (R#).*

This course trains network administrators and support professionals to design, implement, optimize, monitor and troubleshoot networking services on a Windows server. Students will also learn Transfer Control Protocol/Internet Protocol (TCP/IP) networking design, subnetting, and address resolution. Topics covered will also include Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), Windows Internet Naming Service (WINS), Remote Access Service (RAS), Internet Protocol (IP) routing and IP security. **BEFORE ENROLLING** students should know how to install Microsoft Windows server, create and administer user and group accounts, set share permissions, set up network printing, and audit resources. (CSU, AVC)

COURSE OBJECTIVES: *(Title 5 requires that courses show evidence of critical thinking skills. Use Bloom's taxonomy to formulate concise, performance-based measurable objectives common to all students. Objectives must be closely aligned with course content, assignments, and methods of evaluation)*

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

- * 1. Implement, configure, and troubleshoot networking protocols.
- * 2. Create a sub-netting scheme for a given TCP/IP network address.
3. Install and configure a DHCP server service.
4. Install and configure a DNS server service.
5. Install and configure WINS.
6. Install and configure Routing and Remote Access Server (RRAS).
- * 7. Configure static routing.
- * 8. Manage, monitor, and troubleshoot network traffic.
- * 9. Configure IP security.
10. Install and configure Network Address Translation (NAT).
11. Install and configure Internet Connection Sharing (ICS).

* Denotes SCANS competencies

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COURSE CONTENT: *(Enter course content in terms of specific topics or a specific body of knowledge that each instructor must cover. Put topics in outline form with major and minor headings. Each instructor must cover all material listed below.)*

- I. Implementing Networking Protocols
 - A. TCP/IP address, classes, and subnet masks
 - B. Static and dynamic addresses
 - C. Creating a sub-netting scheme
 - D. Troubleshooting TCP/IP
 - E. Configure static routing
- II. DHCP
 - A. IP leasing
 - B. Configure a client for DHCP
 - C. Install DHCP
 - D. Manage, monitor, and troubleshoot DHCP
- III. Domain Name System and WINS
 - A. Install DNS and WINS
 - B. Configure DNS and WINS on the server
 - C. Configure the client for DNS and WINS
 - D. Manage, monitor, and troubleshoot DNS and WINS
- IV. Remote Access
 - A. Install RAS
 - B. Configure a remote access profile
 - C. Configure routing and remote access for DHCP integration
 - D. Manage, monitor, and troubleshoot remote access
- V. IP Security
 - A. Configure IP security
 - B. Customize IP security policies and rules
 - C. Manage and monitor IP security
- VI. NAT and Certificate Services
 - A. Install and configure ICS on Windows server
 - B. Install and configure NAT on Windows server
 - C. Monitor and manage NAT

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TYPICAL HOMEWORK ASSIGNMENTS: (Do not include in-class work, quizzes, or tests)

This information is necessary for all credit courses. Assignments should be closely related to course objectives, content, and methods of evaluation. (See sample of a “Model Outline” in the AP&P Standards & Practices Handbook.) Include a range of assignments (minimum of three) from which faculty may choose when designing their syllabus.

1. Describe nature and frequency of typical reading assignments if applicable; note if any are required:

1. Assigned reading of 15 to 20 pages per week from the text.
2. Appropriate articles as distributed by the instructor.
3. Information as needed from the Microsoft Web site.

2. Describe nature and frequency of typical writing assignments if applicable; note if any are required:

1. Write short, properly written responses to class discussions.
2. Answer assigned textbook problems and exercises.
3. Write technical documentation of Windows server and network systems.
4. Write short essays discussing case projects that require analysis of different networking environments and solutions.

3. Describe nature and frequency of typical computational assignments if applicable; note if any are required:

Students will calculate TCP/IP subnets that will be applied to a multi-Windows server environment.

4. Describe other types of homework assignments that students may be asked to complete (oral presentations; special projects; visual/performing arts; etc); note if any are required:

For categories 1-4 above, list the estimated hours per week it would take a student to complete assignments. Title 5 (section 55002) requires that each unit must be shown to require three hours of work per week by the student either in or out of class. Homework formula: 3 hours of class work times each unit of credit minus classroom hours equals required homework hours.

Reading Assignments: 2

Writing Assignments: 2

Computational Assignments: 1

Other Assignments: 0

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METHODS OF INSTRUCTION: *(Methods must be consistent with content and appropriate to objectives; state in terms of what instructor will be doing in order to present course content to students: for example, lecture, demonstration, present audio/visual materials; facilitate group work, etc. Do not list specific instructional equipment.)*

Lectures and discussions involving student participation using textbooks, current articles and publications. Group exercises and problem-solving assignments. Demonstrations by the instructor.

METHODS OF EVALUATION: *(These must be clearly related to course objectives and reflect course content and assignments in order to comply with Title 5 requirements. Describe what instructor will be looking for when evaluating various assignments and tests in order to determine whether students have met course objectives. Grades must be based on demonstrated proficiency in subject matter and determined, where appropriate, by essays, objective and essay tests, research papers or projects, problem solving exercises, or skills' demonstrations.)*

Grades will be determined by completion of lab assignments, short essays and written responses to class discussions, classroom participation, quizzes, case studies, a complete Windows installation, and exams. Lab assignments will be evaluated based on the student's level of completion. These lab assignments will include installing and configuring Windows server in a network. (Objectives: 1 through 11)

1. The instructor will evaluate the student's ability to configure a Windows server protocols to enable it to communicate on a network. (Objectives: 1, 8)
2. Students will be individually assessed on their ability to install and configure Windows server network services. (Objectives: 3, 4, 5, 6, 7, 9, 10)
3. Students will be evaluated on their ability configure a Windows server network security services. (Objective: 11)
4. Students will be evaluated on their ability to determine and configure the IP address for a Windows network. (Objectives: 2, 8)

Suggested Texts or Other Instructional Materials

(List several when possible; include title, author, publisher, date, and latest edition. If older than five years, provide brief rationale.)

MCSE Guide to Managing a Microsoft Windows Server 2003 Network, Enhanced, 1st Edition

Jason Eckert | M. John Schitka | Brian T. McCann

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This is still the best book published on this topic.