

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

COMPUTER AND INFORMATION SCIENCE 293 – WINDOWS SERVER–ADMINISTERING

1 hour lecture, 3 hours laboratory, 2 units

Catalog Description

Comprehensive hands-on system administration course focusing on the administration tasks essential to administering a Windows server infrastructure, including: user and group management, network access, and data security.

Prerequisite

“C” grade or higher or “Pass” in CIS 190 or equivalent or current Microsoft Certified Technology Specialist (MCTS) 70-680 certification

Entrance Skills

Without the following skills, competencies and/or knowledge, students entering this course will be highly unlikely to succeed:

- 1) Working knowledge of advanced Windows operating system terminology (i.e., permissions, shares, partitioning, RAID, etc.) and advanced computer network terminology (i.e., domain, sub-netting, DNS, DHCP, etc.).
- 2) Working knowledge of command line interpreter command syntax.
- 3) Complete complex computer client setup and configuration procedures without supervision.

Course Content

- 1) Windows server operating system configuration using both graphical user interface and command line tools
- 2) Configuration and implementation of group policy infrastructure, user and services accounts, and Active Directory (AD) domain services
- 3) Configuration and troubleshooting of Domain Naming Services (DNS) and the network policy server role
- 4) File system optimization and security
- 5) Implementing system update management services

Course Objectives

Students will be able to:

- 1) Define server services and system functions, roles and properties; command line and graphical user interface tools and utilities; network security considerations; and the AD infrastructure and functions.
- 2) Deploy and manage server images.
- 3) Configure network name resolution services, including: DNS, Dynamic DNS, DNS server records, forward and reverse lookup zones, secondary zones and stub zones.
- 4) Configure network access, including: remote access, secure socket tunneling, Internet protocol security (IPsec), and network policy server.
- 5) Configure network file and print services, including: distributed file systems, encryptions, file server resource management and audit policies.
- 6) Configure and manage AD functions, including: authentication, domain controllers, backup and recovery, account policies, and advanced Group Policy Object (GPO) management.

Method of Evaluation

A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in subject matter determined by multiple measurements for

evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.

- 1) Written quizzes and exams that measure students' ability to describe computer operating system functions and characteristics analyze a scenario and choose the alternatives and troubleshooting options.
- 2) Scenario-based lab activities that measure students' ability to configure specific operating system functions or subsystems, troubleshoot/analyze imposed system problems, investigate potential alternatives, and implement corrective action to achieve a determined result.
- 3) Practical application-based examinations that measure students' ability to evaluate scenario-based computer configuration requirements/problems, analyze/troubleshoot the operating system configuration, and apply the correct configuration changes to achieve the correct results.

Special Materials Required of Student

USB flash drive

Minimum Instructional Facilities

- 1) Current version of the Windows Server Operating System
- 2) Computer lab with configurable hard drives installed with appropriate software, or a virtualized lab environment using a virtualization PC/Server software that is accessible via the campus network or the Internet
- 3) Instructional domain server capable of student client computer connection (real or virtual)
- 4) Course management system

Method of Instruction

- 1) Lecture and demonstration
- 2) Hands-on practice
- 3) Topical discussion of current operating system trends and issues

Out-of-Class Assignments

May include the following:

- 1) Text reading assignments
- 2) Virtualized Labs
- 3) Tests and quizzes
- 4) Discussion item research and responses

Texts and References

- 1) Required (representative example): Thomas, Orin, Windows Server 2016 Inside Out, Microsoft Press, May 2017.
- 2) Supplemental: None

Student Learning Outcomes

Upon successful completion of this course and given a computer troubleshooting or configuration scenario, students will be able to:

- 1) Deploy a Windows server image.
- 2) Configure and troubleshoot a DNS installation as part of domain controller promotion.
- 3) Configure and troubleshoot advanced AD and GPO implementations/configurations.