CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

COMPUTER AND INFORMATION SCIENCE 294 – WINDOWS SERVER–ADVANCED CONFIGURATION

1 hour lecture, 3 hours laboratory, 2 units

Catalog Description
Comprehensive hands-on system administration course focusing on advanced Windows server configuration tasks, including: fault tolerance, certificate services and identity federation.

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) Server high availability
3) Advanced file system management
4) Disaster recovery and business continuity
5) Advanced networking services configuration
6) Advanced Active Directory (AD) services configuration
7) Identity and access services configuration

Course Objectives
Students will be able to:
1) Define server high availability features, business continuity and disaster recovery features/procedures, and identity and access services features.
2) Configure and implement server high availability services, including Network Load Balancing, Quorum and server clustering.
3) Configuration and management of advanced file system and storage services, including dynamic access control, network file system data stores, branch cache.
4) Implementation of business continuity and disaster recovery services, including Hyper-V replica and bare-metal restore.
5) Implementation and configuration of advanced networking services (IP address management (IPAM), Dynamic Host Configuration Protocol (DHCP), Domain Naming Service (DNS), etc.).
6) Configure and implement advanced Active Directory (AD) services (trusts, sites, forests, read-only domain controllers (RODC), SYSVOL replication).
7) Configure and implement identity and access services (AD Federation Services, Certificate Authority, Rights Management Services).

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 Virtual 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): MCA Windows Server Hybrid Administrator Complete Study Guide with 400 Practice Test Questions: Exam AZ-800 and Exam AZ-801, 1st Edition, William Panek, Wiley Press ISBN: 978-1-394-15541-5, June 7, 2023.
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) Configure a server for high-availability.
2) Recover a server after a major disaster.
3) Configure advanced networking, AD, and identity/access services.