Lecture Contact Hours: 32-36; Homework Hours: 64-72; Total Student Learning Hours: 96-108
Laboratory Contact Hours: 48-54; Homework Hours: 0; Total Student Learning Hours: 48-54

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

COMPUTER AND INFORMATION SCIENCE 190 – WINDOWS OPERATING SYSTEM

2 hours lecture, 3 hours laboratory, 3 units

Catalog Description
Comprehensive hands-on application, use and training on a Windows client computer operating system for both beginning and intermediate level students preparing for the current Microsoft Certified Technology Specialist certification exam. Instruction will include: operating system installation and configuration, graphical user interface and command-line commands, hardware installation and configuration, file system management, user and group management, security configuration, network configuration and management, troubleshooting, and disaster recovery.

Prerequisite
"C" grade or higher or "Pass" in CIS 120 or 125 or equivalent or current CompTIA A+ or N+ 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 basic Windows operating system terminology (e.g., window, task bar, menu bar, tool bar, etc.) and basic information system terminology (e.g., server, input, output, driver, port).
2) Effectively use an input and pointing device to navigate a computer file system and enter commands.
3) Launch application software, save and retrieve files, print files, and rename files without supervision.

Course Content
1) Windows operating system configuration using both graphical user interface and command line tools
2) Installation and configuration of computer peripheral and hardware devices
3) Windows installations and deployment operations
4) Hardware and applications configuration
5) Network connectivity configuration
6) Resource access configuration
7) Mobile computing and remote access
8) System maintenance and performance monitoring
9) Backup and recovery operations and configuration

Course Objectives
Given a computer troubleshooting or configuration scenario, students will be able to:
1) Define operating system functions, properties, tools, utilities and boot functions; hardware and printer resources; network configuration topologies, protocols and properties; security considerations and utilities; file system parameters and configurations; disaster recovery procedures; and the major elements of the Windows operating system architecture.
2) Install the operating system; troubleshoot and repair boot errors.
3) Install and/or configure Windows operating system settings and components using both graphical user interface and command line tools/utilities, including the computer file system (compression

and encryption, fragmentation, and disk configurations); hardware and printers; and system performance utilities.
4) Create and manage computer users and groups including user policies, user file and folder access and user profiles.
5) Configure and manage Windows operating system networking functions, to include joining a peer and a domain network, folder sharing, shared folder access, and virtual private networking.
6) Configure and troubleshoot computer security configurations, including resource access, auditing, firewalls and software updates.
7) Backup and recover data and system settings using backup utilities, System Restore, system repair utilities and disk recovery utilities.

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
Computer lab with configurable hard drives installed with appropriate software, or a virtualized lab environment using either VMWare or Virtual PC/Server software that is accessible via the campus network or the Internet; current version of Professional Edition of Windows Operating System; instructional domain server capable of student client computer connection (real or virtual); 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) Reading assignments
2) Virtualized labs
3) Tests and quizzes
4) Discussion item research and responses

Texts and References
1) Required (representative examples):
   a. Crystal Panek, Windows Operating System Fundamentals, Sybex, November 2019. ISBN: 9781119650515
   b. Microsoft Official Academic Curriculum (MOAC) Online Lab Environment
2) Supplemental: Orin, Thomas. Configuring Windows 7 MCTS. PHI, 2013.

Exit Skills
Students having successfully completed this course exit with the following skills, competencies and/or knowledge:
1) Perform and troubleshoot a Windows operating system installation.
2) Configure, manage and troubleshoot access to files, folders and shared folders.
3) Manage computer storage systems including drive partitioning, formatting, disk quotas and file synchronization.
4) Configure, manage and connect to local and network print devices and print queues.
5) Configure, manage install and troubleshoot computer hardware and drivers.
6) Perform a system backup as well as restore files from a backup.
7) Recover user and system state data using the System Restore and system repair utilities.
8) Configure and manage users, groups, user profiles and user environments using the Group Policy and other utilities.
9) Configure and troubleshoot IP network settings and connect client computers to a peer and a domain network.
10) Configure and manage computer security policies, access policies and firewalls.

Student Learning Outcomes
Upon successful completion of this course, students will be able to:
1) Install, deploy, configure, repair, and manage a Windows client project using current industry software, hardware, and standards.