

NETWORKING II: SERVERS

Networking II: Servers – This course focuses on operating systems and software needed to manage services within an enterprise network. Students will learn and practice the skills necessary to perform the role of a system administrator. They will be able to accomplish fundamental server system management tasks including: setup of computer network services, create users and appropriate login scripts, develop groups, establish remote access, setup security, backup/restore the server and services, and setup/maintain clients.

- DOE Code: 5257
- Recommended Grade Level: Grade 11-12
- Required Prerequisites: Information Technology Support
- Recommended Prerequisites: Networking I
- Credits: 1-3 credits per semester, maximum of 6 credits, 2 semesters required
- Counts as a Directed Elective or Elective for all diplomas

Dual Credit

This course provides the opportunity for dual credit for students who meet postsecondary requirements for earning dual credit and successfully complete the dual credit requirements of this course. The Dual Credit crosswalk can be accessed [here](#).

Application of Content and Multiple Hour Offerings

Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences. When a course is offered for multiple hours per semester, the amount of laboratory application or work-based learning needs to be increased proportionally.

Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in Business Professionals of America or Future Business Leaders of America, the CTSOs for this area.

Content Standards

Domain 1 – Client Operating System Installation

Core Standard 1: Students install and/or upgrade the network client operating system.

Standards

- SS-1.1 Create boot, system, and file partitions
- SS-1.2 Perform a clean unattended installation of operating system
- SS-1.3 Perform an upgrade installation of operating system
- SS-1.4 Troubleshoot operating system installation

Domain 2 – Client System Image

Core Standard 2: Students deploy a network client system image in order to setup network clients.

Standards

- SS-2.1 Capture and prepare client system image for deployment
- SS-2.2 Deploy system image and troubleshoot problems that occur

Domain 3 – Client Hardware and Software Applications

Core Standard 3: Students configure network client hardware and software applications.

Standards

- SS-3.1 Configure hardware compatibility for the operating system including the installation and/or update of a device driver
- SS-3.2 Manage hardware components by using system utility programs
- SS-3.3 Configure an application's compatibility for the operating system

Domain 4 – Client Connectivity

Core Standard 4: Students configure network client connectivity to establish a connection with a network.

Standards

- SS-4.1 Configure IPv4 and IPv6 network settings
- SS-4.2 Configure IP addressing services
- SS-4.3 Troubleshoot TCP/IP protocols
- SS-4.4 Configure wired or wireless devices
- SS-4.5 Configure remote management tools and virtual private network access

Domain 5 – Network Client Access

Core Standard 5: Students configure network client access to resources available on a network.

Standards

- SS-5.1 Configure shared resources such as disk storage devices, printers, and web sites
- SS-5.2 Perform file management including synchronization and maintain file/folder attributes
- SS-5.3 Create and maintain security to network resources

Domain 6 – Monitoring and Maintaining Client Systems

Core Standard 6: Students monitor and maintain network client systems to sustain network operations.

Standards

- SS-6.1 Install updates and service packs to client operating system
- SS-6.2 Manage disk volume, file system, and RAID
- SS-6.3 Configure client performance settings
- SS-6.4 Implement security policies including antivirus software and firewall
- SS-6.5 Encrypt data on hard disk using an encrypting file system
- SS-6.6 Configure and troubleshoot accessibility services

Domain 7 – Network Client Backup and Recovery

Core Standard 7: Students configure network client backup and recovery options to safe-guard data.

Standards

- SS-7.1 Investigate and configure backup options
- SS-7.2 Evaluate and configure system recovery options

Domain 8 – Server Operating System

Core Standard 8: Students install and/or upgrade the network server operating system.

Standards

- SS-8.1 Perform a clean installation of operating system
- SS-8.2 Perform an upgrade installation of operating system
- SS-8.3 Install updates for operating system

Domain 9 – System Services

Core Standard 9: Students configure the enterprise group policy and topology

Standards

- SS-9.1 Plan network domain framework(s) and authentication services
- SS-9.2 Install, configure, and maintain network domains with authentication and group policies

Domain 10 – Server Roles and Services

Core Standard 10: Students configure the server roles and services

Standards

- SS-10.1 Configure lightweight file and directory services
- SS-10.2 Configure rights management file system permissions services
- SS-10.3 Understand and configure when appropriate the read-only controller
- SS-10.4 Configure trust policies

Domain 11 – User and Group Accounts

Core Standard 11: Students create and maintain user and group account objects.

Standards

- SS-11.1 Create user accounts and maintain profiles
- SS-11.2 Create and apply group policy
- SS-11.3 Configure user rights by implementing security options

- SS-11.4 Deploy and manage software with group policy
- SS-11.5 Determine and configure password and account lockout policies
- SS-11.6 Configure audit policies with group policies

Domain 12 – Domain Name Services (DNS)

Core Standard 12: Students configure Domain Name Services (DNS).

Standards

- SS-12.1 Install the DNS services
- SS-12.2 Configure DNS zones and settings
- SS-12.3 Monitor and troubleshoot DNS

Domain 13 – System Environment

Core Standard 13: Students maintain the system environment.

Standards

- SS-13.1 Configure and perform system backup and recovery options
- SS-13.2 Perform offline maintenance such as defragment and compact
- SS-13.3 Interpret system log files
- SS-13.4 Create scripts to automate tasks
- SS-13.5 Monitor, recover, and optimize services
- SS-13.6 Use virtualization software to create and run virtual machines

Domain 14 – Services

Core Standard 14: Students install and configure services.

Standards

- SS-14.1 Install certificate services to secure data with encryption
- SS-14.2 Manage certificate templates and revocations
- SS-14.3 Install other services such as e-mail, IP addressing, web, ftp, and database
- SS-14.4 Differentiate between various types of cloud deployment models
- SS-14.5 Analyze, configure, and deploy cloud services
- SS-14.6 Apply security compliance in terms of cloud-based services