

Server and Cloud Application – Network Focus

Learning Objectives

AUG 26, 2024

Pre-Requisites

College Algebra transcripts
or
Math placement test available online

Outcomes

- ☐ Analyze network architecture, standards, security & protocols
- ☐ Deploy Linux/Win OS apps
- ☐ Architect cloud solutions
- ☐ Develop skills in scripting & automation

Certification Opportunities*



* Two certification exam vouchers are included in lab fees. WAV2T reserves the right to change which certifications are included under the voucher program.

CSC 160: Introduction to Computer Software

- ☐ Describe and demonstrate basic algorithm development
- ☐ Understand basic computer processing, programming logic, and data structures
- ☐ Demonstrate the use of basic programming logic such as iteration/selection statements; arithmetic/conditional expressions; and functions/methods
- ☐ Demonstrate the use of basic data structures such as literals/strings/int/float and lists/tuples/sets/dictionaries
- ☐ Describe software, hardware processes including the binary/decimal/hexadecimal numerical systems
- ☐ Understand and demonstrate use of basic Linux CLI
- ☐ Understand and demonstrate concepts of software development/project collaboration platforms

CSC 330: Networking and Server Fundamentals

- ☐ Introduce the OSI Model
- ☐ Understanding; LAN, Wired & Wireless Networks, IP, & WAN
- ☐ Defining Network Infrastructure & security
- ☐ Install and configure DNS servers
- ☐ Create and configure DNS zones & records
- ☐ Install, configure and manage DHCP
- ☐ Implement: Network VPN connectivity solution
- ☐ IPv4/IPv6 addressing solutions, VLSM, subnetting
- ☐ Develop high-performance network solutions
- ☐ Identify scenarios/requirements for implementing SDN

CSC 395: Applied Network Concepts

- ☐ Establish network connectivity by deploying wired and wireless devices.
- ☐ Understand and maintain network documentation.
- ☐ Understand the purpose of network services.
- ☐ Understand basic datacenter, cloud and virtual networking concepts.
- ☐ Monitor network activity, identifying performance and availability issues.
- ☐ Implement network hardening techniques.
- ☐ Manage, configure, and troubleshoot network infrastructure.

CompTIA Network+
Exam Preparation

CSC 235: Introduction to Linux and Linux Administration

- ☐ Provision and maintain Linux Infrastructure
- ☐ Gain an understanding of Linux commands and architecture
- ☐ Work at the command line to install, update, and configure system components
- ☐ Learn standards and management for user and file permissions
- ☐ Understand fundamentals of system security, performance, and maintenance
- ☐ Explore the implementation of tools for automating these practices

CSC 331: Server Configuration and Management (IAM/Linux Admin LDAP/Active Directory)

- ☐ Install/config. domain controllers, AD CS, AD FS, & AD RMS
- ☐ Create/manage AD users, groups, OUs, & computers
- ☐ Configure service authentication & account policies
- ☐ Maintain Active Directory
- ☐ Understand LDAP and IAM with Linux Administration
- ☐ Configure AD in a complex enterprise environment
- ☐ Create and manage GPOs
- ☐ Config Group Policy processing, settings & preferences
- ☐ Manage certificates & Implement WAP

CSC 456: Configuring and Deploying Cloud Technologies

AWS Cloud
Practitioner Exam
Preparation

- ☐ Create and scale virtual machines
- ☐ Implement storage solutions
- ☐ Configure virtual networking
- ☐ Back up & share data using Data Services
- ☐ Connect to the cloud & on-premises sites
- ☐ AWS CDK
- ☐ AWS Identity and Access Management
- ☐ Monitor infrastructure
- ☐ Manage network traffic
- ☐ Secure identities

Server and Cloud Application – Data Center Technician Learning Objectives

June 10, 2025

Pre-Requisites

**College Algebra transcripts
or
Math placement test
available online**

Outcomes

- Foundations of Hardware and System Administration
- Data Center Networking
- Inventory and Logistics Management
- Technical Troubleshooting
- Operational Prioritization & Incidence Response

Certification Opportunities*



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CSC 395: ST: Server Hardware Management

- ❑ Identify and compare different RAID levels (e.g., RAID 0, 1, 5, 6, 10) and their use cases in data center environments
- ❑ Configure and maintain RAID arrays to ensure data redundancy and optimize performance
- ❑ Explain the fundamental architecture and components of SAN solutions and their business requirements
- ❑ Optimize server hardware settings in x86-based environments services
- ❑ Fundamentals of cable communication and testing of copper-wire, coaxial, and fiber-optical cables.
- ❑ Understand disaster recovery and management
- ❑ Troubleshoot network device and IT equipment
- ❑ Inventory management knowledge to order, receive and ship server parts

CSC 160: Computing Technologies (Introduction to Computer Science)

- ❑ Introduce the OSI Model
- ❑ Perform Operations using Data Type and Operators
- ❑ Introduction to Python programming language
- ❑ Control Flow with Decisions and Loops
- ❑ Document and Structure Code
- ❑ Perform Troubleshooting and Error Handling
- ❑ Perform Operations using Modules and Tools
- ❑ Understand and manage prioritization based on business needs and urgency

CompTIA Tech+ Exam Preparation

CSC 330: Networking and Server Fundamentals

- ❑ Understanding; LAN, Wired & Wireless Networks, IP, & WAN, SANS
- ❑ Apply network device configuration
- ❑ Defining Network Infrastructure & security
- ❑ Install and configure DNS servers
- ❑ Create and configure DNS zones & records
- ❑ Install, configure and manage DHCP
- ❑ Implement: Network VPN connectivity solution
- ❑ IPv4/IPv6 addressing solutions, VLSM, subnetting
- ❑ Configure and manage network devices in Linux/Unix environments
- ❑ Apply network security best practices in system configurations

CSC 235: Introduction to Linux & Linux Administration

CompTIA Linux+ Exam Preparation

- ❑ Understand File Systems; provision and maintain Linux infrastructure
- ❑ Describe the steps involved in the Linux/Unix boot process and identify where failures can occur
- ❑ Gain an understanding of Linux commands and architecture, GRUB/LILO
- ❑ Work at the command line to install, update, and configure system components
- ❑ Learn standards and management for user and file permissions & fundamentals of system security, performance, and maintenance
- ❑ Perform basic system administration tasks, including well organized user management, process monitoring, and file system navigation

CSC 332: Configuring Advanced Server Services

- ❑ Install/config. domain controllers, AD CS, AD FS, & AD RMS
- ❑ Create/manage AD users, groups, OUs, & computers
- ❑ Configure service authentication & account policies
- ❑ Maintain Active Directory
- ❑ Explain the stages of the boot process in Linux/Unix systems;
- ❑ Configure and troubleshoot GRUB/LILO bootloaders
- ❑ Config Group Policy processing, settings & preferences
- ❑ Manage certificates & Implement WAP
- ❑ Understand the core components of the x86 (32-bit & 64-bit) CPU architecture, including memory management, instruction sets, and processor functionality
- ❑ Understand SAN software and LUN configuration and management
- ❑ Understand disaster recovery and management

CSC 456: Configuring and Deploying Cloud Technologies

- ❑ Create and scale virtual machines
- ❑ Understand cloud & virtualization technologies, containerization & management
- ❑ Implement storage solutions
- ❑ Configure virtual networking
- ❑ Back up & share data using Data Services
- ❑ Connect to the cloud & on-premises sites
- ❑ Identity and Access Management
- ❑ Monitor infrastructure
- ❑ Manage network traffic
- ❑ Secure identities

Cybersecurity Administration – Learning Objectives

AUG 26, 2024

Pre-Requisites

College Algebra transcripts
or
Math placement test available
online

And one of the following:
- 1 Year of IT experience
- CompTIA A, Network+, CCNA
- Graduate of the Wav2T
SCA/CAD Program

Outcomes

- ☐ Understand physical security principles, Internet & wireless security
- ☐ Analyze user authentication, permissions, password & audit policies, encryption & malware
- ☐ Create dedicated firewalls, network isolation & protocol security
- ☐ Configure & protect cloud data stores & local databases
- ☐ Conduct security & risk assessments & system audits
- ☐ Create an incident response report
- ☐ Create a risk assessment report on a real-world business

Certification Opportunities*



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CSC 160: Introduction to Computer Software

Python/PHP/Linux

- ☐ Describe and demonstrate basic algorithm development
- ☐ Understand basic computer processing, programming logic, and data structures
- ☐ Demonstrate the use of basic programming logic such as iteration/selection statements; arithmetic/conditional expressions; and functions/methods
- ☐ Demonstrate the use of basic data structures such as literals/strings/int/float and lists/tuples/sets/dictionaries
- ☐ Demonstrate scripting skills using tools such as Python/PHP/Bash
- ☐ Understand and demonstrate use of basic Linux CLI
- ☐ Understand and demonstrate concepts of software development/project collaboration platforms

CSC330: Network and Server Fundamentals

- ☐ Explain the concepts of computer networking, the protocols: TCP/IP & DHCP & NPS
- ☐ Understand Windows active directory
- ☐ Implement security configuration on network devices & other technologies;
- ☐ Explain the basic concepts of virtualization, virtual machines, and software defined networks
- ☐ Intercept & analyze network traffic
- ☐ Learn how to harden OS/Apps and secure networks from attacks
- ☐ Identify adversary threat vectors (tactics & against / using OSI level protocols)
- ☐ Understand Wireshark. Metasploit, Aircrack-ng, Nmap,

CSC 325: Computer Security

CompTIA Sec+
Exam Preparation

- ☐ Understand the computer security concepts of the CIA/DAD triad as well as the threats, vulnerabilities, and risk model
- ☐ Understand the strategic and operational security requirements protecting computing system infrastructure
- ☐ Understand the governance principles of computer security
- ☐ Identify and discuss malware and social engineering attack vectors and corresponding defensive controls
- ☐ Understand and explain secure network (including OS, apps, and website) and endpoint architecture design and operations
- ☐ Understand crypto logical concepts including PKI architecture and administration

CSC 455 Cloud Technologies

AWS Cloud
Practitioner Exam
Preparation

- ☐ Explain concepts of Identity Management, the Control Plane, Access Control to cloud/server architectures
- ☐ AAA: Authentication, Authorization, Accounting
- ☐ Cloud security/cloud service models/backup & log analytics
- ☐ Cloud gateways, Web App security, Firewalls & dealing with DDoS threats
- ☐ Cloud Disk & Storage Encryption
- ☐ Identify key legal/ethical/regulatory elements that underpin identity management, AC, & accountability

CSC 364: Cybersecurity Threat Intelligence

- ☐ Monitor use of data files and regulate access to safeguard information in computer files
- ☐ Demonstrate how NIST Cybersecurity Framework is used in planning/assessing info. sys. security plans/ programs
- ☐ Autopsy tools – digital forensics
- ☐ Monitor current report of viruses/understand when to update virus protection systems
- ☐ Reverse engineering (Ghidra)
- ☐ Research top 10 vulnerabilities according to OWASP
- ☐ Shodan.io, OSINT

CSC 426: Vulnerability Assessment:

- ☐ Relate organizational risk management to vulnerability assessment and risk mitigation
- ☐ Apply the concepts of threat modeling & threat surfaces to IT systems, public, private and hybrid cloud environments
- ☐ Explain architectural security elements OSI
- ☐ Monitor current report of viruses/understand when to update virus protection systems
- ☐ Conduct vulnerability assessments using CVE: Common Vulnerabilities and Exposure data, in conjunction with situation-specific threat modeling
- ☐ Develop and implement risk mitigation solutions to contain, eliminate or otherwise mitigate risks found in IT systems



Professional Development

- The Career Development Managers (CDM) for the Washington Veterans to Tech (WaV2T) program are responsible for the job placement function for a cohort of WaV2T students.
- Our CDMs also maintain relationships with employers, and graduates of the WaV2T program, managing the social network of this specialized community.



Resumes

- Translating military experience
- Personal assessment
- Target Resumes



Cover Letters

- Personalization
- Selling yourself



Virtual Presence

- LinkedIn
- Personal branding
- Social Media



Job Search

- Target job market
- Hiring managers
- Recruiters



Interview skills

- Research Company
- Mock Interviews
- Negotiations
- Job offers