## Learning Objectives

- Analyze network architecture, standards, security & protocols
- Deploy Linux/Windows OS apps
- Architect cloud solutions
- Develop skills in scripting & automation
- 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 solutions
- IPv4/IPv6 addressing solutions, VLSM, subnetting
- Develop high-performance network solutions
- Identify scenarios/requirements for implementing SDN
- 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
- Create and manage GPOs
- Manage certificates & Implement WAP
- 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.

## Pre-Requisites

- College Algebra transcripts
- Math placement test available online

## Outcomes

- Analyze network architecture, standards, security & protocols
- Deploy Linux/Windows OS apps
- Architect cloud solutions
- Develop skills in scripting & automation
- Introduce the OSI Model
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- Install and configure DNS servers
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- Develop high-performance network solutions
- Identify scenarios/requirements for implementing SDN

## Certification Opportunities*

- 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
- 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
- Create and manage GPOs
- Config Group Policy processing, settings & preferences
- Manage certificates & Implement WAP

* Two certification exam vouchers are included in lab fees. WAV2T reserves the right to change which certifications are included under the voucher program.
Cloud Application Development (CAD)

Learning Objectives

May 2, 2024

Pre-Requisites

- College Algebra transcripts or Math placement test available online

Outcomes

- Program using Object Oriented languages
- Apply Software Development Lifecycle (SDL)
- Develop web applications
- Design & build databases

Certification Opportunities*

- Program using Object Oriented languages
- Apply Software Development Lifecycle (SDL)
- Develop web applications
- Design & build databases

CSC 160: Introduction to Computer Software

- Describe and demonstrate basic algorithm development and SDLC
- 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
- Understand object oriented programming (OOP) and event driven programming
- Understand and demonstrate use of basic Linux CLI
- Understand and demonstrate concepts of software development/project collaboration platforms
- Understand web programming basics

CSC 210: Database Fundamentals

- Understanding Database Concepts
- SQL Proficiency
- Normalization Techniques
- Database Design and Implementation
- Data Manipulation
- Transaction Management
- Database Security
- Database Administration
- Database Connectivity
- Database Trends and Technologies

CSC 230: Introduction to Web Development (HTML5, CSS3 and JavaScript)

- Describe HTML5 features & create/style HTML5 pages
- Add interactivity to an HTML5 page using JavaScript
- Create HTML5 forms with input types/validate user input
- Send/receive data using XMLHttpRequest/JSON API
- Build web-based application with NoSQL backend
- Create well-structured JavaScript code
- Identify and use current JavaScript version compatible with web browsers
- Use HTML5 APIs
- Create Web applications that support offline operations
- Style HTML5 pages using CSS3, vector graphics, and animation
- Use web sockets to send data to web apps & servers
- Use WebPack to package web apps for production

CSC 205: Application Programming Language and Tools (Java/Object Oriented Programming)

- Introduction to Java syntax and variables
- Define classes and instantiate objects. Use of fields and methods.
- Use instance, static, and overloaded methods
- Understand variable scope, encapsulation, immutable objects, class inheritance (subclasses and super classes)
- Understand four pillars of object-oriented programming, abstraction, encapsulation, inheritance and polymorphism
- Define and use enumerations
- Understand exception handling
- Create custom exceptions
- Work with arrays, and collections (including list, set, map and deque collections)
- Introduction to generics

CSC 295: Introduction to Algorithms & Data Structures

- Analyze and compare code using the asymptotic analysis (Big-O)
- Implement sequential and interval search algorithms
- Implement sorting algorithms such as: bubble sort, selection sort, insertion sort, merge sort, and quicksort
- Implement data structures such as: array lists, linked lists, stack, queues, and binary search trees graphs
- Make use of generic programming
- Acquire skillsets on troubleshooting code revisions

CSC 395: AI-Assisted Analysis and Development

- Understanding AI Fundamentals
- AI Tools and Frameworks
- Data Preprocessing and Feature Engineering
- Supervised and Unsupervised Learning
- Model Evaluation and Validation
- AI-Assisted Analysis
- AI Model Development
- Ethical and Responsible AI
- AI Deployment and Integration
- Emerging AI Trends

Certification Opportunities*

- Program using Object Oriented languages
- Apply Software Development Lifecycle (SDL)
- Develop web applications
- Design & build databases

* Three certification exam vouchers are included in lab fees. WA2T reserves the right to change which certifications are included under the voucher program.
Cybersecurity Administration – Learning Objectives

Pre-Requisites

- College Algebra transcripts or Math placement test available online
- And one of the following:
  - 1 Year 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*

- CSC 160: Introduction to Computer Software
  - Python/PHP/Linux
- CSC 330: Network and Server Fundamentals
- CSC 325: Computer Security
  - CompTIA Sec+ Exam Preparation
- CSC 455 Cloud Technologies
  - AWS Cloud Practitioner Exam Preparation
- CSC 364: Cybersecurity Threat Intelligence
- CSC 426: Vulnerability Assessment

* 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
- 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

CSC 330: 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,
- 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

- 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 426: Vulnerability Assessment

- 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
- Sho kan. io, OSINT

CSC 364: Cybersecurity Threat Intelligence

- 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

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May 2, 2024
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.

**Professional Development**

- **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