

**VIRGINIA WESTERN COMMUNITY COLLEGE
OFFICE OF DUAL ENROLLMENT
REGIONAL ACADEMY
CYBER SECURITY/SUPPORT ANALYST
2024-2025**

Monday – Friday

8:00 – 10:45 (refer to the class schedule in SIS for actual times)

Portions of this program are offered online only

Two-Year Program designed for 11th and 12th grade students

**Refer to the VWCC Website for current tuition rates in effect at time of enrollment*

Purpose: This curriculum is designed to give students the knowledge and skills needed to secure servers and network infrastructures. Topics include how to develop a security infrastructure, recognize threats and vulnerabilities to networks and servers, and to mitigate security threats. The student can also sit for the CompTIA Security+ Certification and CompTIA Linux+ Certification.

Program Objectives: Students will complete the requirements to earn the IT: Cyber Security Career Studies Certificate and/or the IT: Information Technology Support Analyst Career Studies Certificate. Coursework partially completes the IT: Cyber Security and Network Administration Specialization, A.A.S. degree. Employment opportunities include entry-level positions as a Network Analyst, Security Analyst, or a Security Architect.

Dual Enrollment Admission Requirements: HS GPA of 3.0 or higher; Passing grade of “C” or higher in Algebra II. Keyboarding and MOS experience recommended.

Course Format: c = campus; v = virtual; z=synchronous via zoom; h=hybrid (both v and c)

Note:

MTH 130 – Fundamentals of Reasoning 3 cr (v) can sub MTH 167 (Pre-Calc w Trig)

First Semester

SDV 101 – Orientation to Information Technology 2 cr (v)

ITN 107 – Personal Computer Hardware and Trouble Shooting 3 cr (c, v, z, h)

ITN 154 - Introduction to Networks (CISCO) 3 cr (c, v)

CSC 221-Introducton to Program Solving and Programming 3 cr (c, v, h)

Second Semester

ITN 155 Switching, Routing, and Wireless Essentials CISCO 4 cr (v, c) (prereq ITN 154)

ITN 111 Server Administration prereq ITN 154

ITE 152 – Intro Digital Literacy and Computer Applications 3 cr (c, v)

MTH 130 – Fundamentals of Reasoning (c, v)

Third Semester

ITN 170 Linux System Administration 3 cr (v)

ITN 260 - Network Security Basics 3 cr (v)

CSC 215 – Computer Systems 3 cr (v) (prereq CSC 221)

Fourth Semester

ITN 261 Network Attacks, Computer Crime and Hacking 3cr (z) (prereq ITN 260)

ITN 267 Legal Topics in Network Security 3 cr (z)

Courses:

CSC 215 - Computer Systems

Examines the hierarchical structure of computer systems. Explores the representation of instructions and data, memory organization/structure, structure of a CPU, programming hierarchy and operating system interactions.

Lecture 3 hours. Total 3 hours per week.

Prerequisite: CSC 221

3 credits

CSC 221 - Introduction to Problem Solving and Programming

Introduces problem solving and implementation of solutions using a high-level programming language in a structured programming environment. Includes concepts and practice of structured programming, problem-solving, top-down design of algorithms, a high level programming language syntax, control structures, arrays, and an introduction into object oriented programming. The assignments in this course require mathematical problem solving skills, algebraic modeling and functions, and use of variables.

ITE 152 - Introduction to Digital and Information Literacy and Computer Applications

Develops understanding of digital and information literacy. Introduces basic computer concepts in hardware, software, cyber, cloud, database, and operating systems. Includes hands-on experience developing word processing, spreadsheet and presentation documents. Evaluates the reliability of sources. Covers creating a simple web page. Examines topics such as social, legal, and ethical issues. This is a UCGS transfer course.

ITN 107 - Personal Computer Hardware and Troubleshooting

Includes specially designed instruction to give a student a basic knowledge of hardware and software configurations. Includes the installation of various peripheral devices as well as basic system hardware components.

ITN 111 - Server Administration (Specify Version)

Covers installation, configuration, administration, management, maintenance, and troubleshooting of a server in a networked environment.

ITN 154 - Introduction to Networks - Cisco

Provides instruction in the fundamentals of networking environments, the basics of router operations, and basic router and switch configuration.

ITN 155 - Switching, Routing and Wireless Essentials - Cisco

Provides the skills and knowledge to install, operate, and troubleshoot routers and switches in small networks. Introduces students to wireless local area networks (WLANS) and network security concepts.

Prerequisite: ITN 154

ITN 170 - Linux System Administration

Focuses instruction on the installation, configuration and administration of the Linux operating system and emphasizes the use of Linux as a network client and workstation.

ITN 260 - Network Security Basics

Provides instruction in the basics of network security in depth. Includes security objectives, security architecture, security models and security layers; risk management, network security policy, and security training. Includes the five security keys, confidentiality integrity, availability, accountability and auditability.

ITN 261 - Network Attacks, Computer Crime and Hacking

Encompasses in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the viewpoint hackers and their attack methodologies. Includes topics about hackers, attacks, Intrusion Detection Systems (IDS) malicious code, computer crime and industrial espionage.

ITN 267 - Legal Topics in Network Security

Conveys an in-depth exploration of the civil and common law issues that apply to network security. Explores statutes, jurisdictional, and constitutional issues related to computer crimes and privacy. Includes rules of evidence, seizure and evidence handling, court presentation and computer privacy in the digital age.

MTH 130 - Fundamentals of Reasoning

Presents elementary concepts of algebra, linear graphing, financial literacy, descriptive statistics, and measurement & geometry. Based on college programs being supported by this course, colleges may opt to add additional topics such as logic or trigonometry. This course is intended for occupational/technical programs.

SDV 101 - Orientation To (Specify the Discipline)

Introduces students to the skills which are necessary to achieve their academic goals, to services offered at the college and to the discipline in which they are enrolled. Covers topics such as services at the college including the learning resources center; counseling, and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline.