

# 2024-2025 Assessment Plan

## Cybersecurity, Virtualization, and Networking

### Mission

To provide students with the technical and organizational skills needed to design, configure, and build computer networks and develop and create cybersecurity infrastructure for business and industry.

2024-2025

Cybersecurity, Virtualization, and Networking Learning Outcomes

Cybersecurity Fundamentals

Identify basic cybersecurity terminology, types of cybercrimes, and risk strategies.

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On-Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons. don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Security Fundamentals: CVNP 2615</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On-Campus)</b></p> <p>Comprehensive exam on security fundamentals.</p> <p>Direct - Exam (Course)</p> <p><i>Security Fundamentals: CVNP 2615</i></p> <p><b>Target</b></p> <p>70% of students will score a 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Security Fundamentals: CVNP 2615</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on security fundamentals.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

Direct - Exam (Course) Security Fundamentals: CVNP 2615 <b>Target</b>  70% of students will score a 70% or better.		
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Networking Fundamentals

Demonstrate an understanding of NICs, identify different physical and logical characteristics of network connections, demonstrate configuration of routers and switches, demonstrate use of remote access, and understand all types of wired and wireless communications.

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p>Cisco 1: CVNP 1603</p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam on networking fundamentals.</p> <p>Direct - Exam (Course)</p> <p>Cisco 1: CVNP 1603</p> <p><b>Target</b></p> <p>70% of students will score a 70% or better on the Final Exam for Cisco 1.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p>Cisco 1: CVNP 1603</p> <p><b>Target</b></p> <p>60% of students will earn a grade of C or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on networking fundamentals.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

Direct - Exam (Course) Cisco 1: CVNP 1603 <b>Target</b>  70% of students will score a 70% or better.		
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Computer and Peripheral Hardware

Demonstrate an understanding of the function and design of computer hardware components and associated peripheral devices, including support of computers and peripherals.

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p>Computer Hardware: CVNP 2626</p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam on hardware.</p> <p>Direct - Exam (Course)</p> <p>Computer Hardware: CVNP 2626</p> <p><b>Target</b></p> <p>70% of students will score a 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p>Computer Hardware: CVNP 2626</p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on hardware.</p> <p>Direct - Exam (Course)</p> <p>Computer Hardware: CVNP 2626</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

<b>Target</b>		
70% of students will score 70% or better.		

Desktop Operating Systems

Students will demonstrate understanding of Windows and Linux operating systems, including configuration and troubleshooting,

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Supporting Windows Operating Systems: CVNP 1606</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam on operating systems.</p> <p>Direct - Exam (Course)</p> <p><i>Supporting Windows Operating Systems: CVNP 1606</i></p> <p><b>Target</b></p> <p>70% of students will score a 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Supporting Windows Operating Systems: CVNP 1606</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on operating systems.</p> <p>Direct - Exam (Course)</p> <p><i>Supporting Windows Operating Systems: CVNP 1606</i></p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

<b>Target</b>		
70% of students will score a 70% or better.		

Virtual and Cloud Computing

Demonstrate ability to create and manage virtual machines. Demonstrate ability to use Kubernetes to manage a cluster of containers. Troubleshoot and tune virtual machines for specific use cases.

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Virtual Computing: CVNP 2601</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam on virtual computing.</p> <p>Direct - Exam (Course)</p> <p><i>Virtual Computing: CVNP 2601</i></p> <p><b>Target</b></p> <p>70% of students will score 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Virtual Computing: CVNP 2601</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on virtual computing. Direct - Exam (Course) <i>Virtual Computing: CVNP 2601</i></p> <p><b>Target</b></p> <p>70% of students will score a 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
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Advanced Cybersecurity

This includes offensive security, defensive security and cyber forensics, and network based security controls and policies. Demonstrate ability to read logs, engineer detections in various cyber tools, collect and analyze endpoint data, and knowledge of the incident handling process

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade <i>Defensive Security: CVNP 2625</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam on defensive security. Direct - Exam (Course) <i>Defensive Security: CVNP 2625</i></p> <p><b>Target</b></p> <p>70% of students will score 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade <i>Defensive Security: CVNP 2625</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

<p>Comprehensive exam on defensive security.                  Direct - Exam (Course)  <i>Defensive Security: CVNP 2625</i>  <b>Target</b>                  70% of students will score a 70% or better.</p>		
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Linux Fundamentals

Demonstrate use of Linux command line and installing/configuring Linux systems.

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade  <i>Linux Administration: CVNP 1601</i>  <b>Target</b>                  60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam on Linux.                  Direct - Exam (Course)  <i>Linux Administration: CVNP 1601</i>  <b>Target</b>                  70% of students will score a 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade  <i>Linux Administration: CVNP 1601</i>  <b>Target</b>                  60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on Linux.                  Direct - Exam (Course)</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

<p><i>Linux Administration: CVNP 1601</i></p> <p><b>Target</b></p> <p>70% of students will score a 70% or better.</p>		
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Python and Scripting

Demonstrate foundational knowledge of Python concepts. Create scripts to automate processes using Python. Leverage programming languages to script out repetitive tasks.

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Python/JSON: CVNP 2646</i></p> <p><b>Target</b></p> <p>70% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on Python/JSON.</p> <p>Direct - Exam (Course)</p> <p><i>Python/JSON: CVNP 2646</i></p> <p><b>Target</b></p> <p>70% of students will score 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Python/JSON: CVNP 2646</i></p> <p><b>Target</b></p> <p>60% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam of Python/JSON.</p> <p>Direct - Exam (Course)</p> <p><i>Python/JSON: CVNP 2646</i></p> <p><b>Target</b></p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>



**Cybersecurity, Virtualization, and Networking**

70% of students will score a 70% or better.		
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**Network Systems Administration**

Demonstrate ability to manage network level tools. Troubleshoot network based issues. Demonstrate knowledge of common network services and ports and protocols.

MEASURES	RESULTS	ACTIONS
<p><b>Course Grade (On Campus)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Advanced Network Operating System: CVNP 2603</i></p> <p><b>Target</b></p> <p>70% of students will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (On Campus)</b></p> <p>Comprehensive exam on advanced networking operating systems.</p> <p>Direct - Exam (Course)</p> <p><i>Advanced Network Operating System: CVNP 2603</i></p> <p><b>Target</b></p> <p>70% of students will score 70% or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Course Grade (Online)</b></p> <p>We will measure the course grade for students who are still enrolled after the second week of school, because students who are not able to complete for various reasons don't always withdraw or get dropped right away.</p> <p>Indirect - Overall Course Grade</p> <p><i>Advanced Network Operating System: CVNP 2603</i></p> <p><b>Target</b></p> <p>70% of student will earn a C grade or better.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Final Exam - Written (Online)</b></p> <p>Comprehensive exam on advanced network operating systems.</p> <p>Direct - Exam (Course)</p> <p><i>Advanced Network Operating System: CVNP 2603</i></p> <p><b>Target</b></p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>

**Cybersecurity, Virtualization, and Networking**

70% of students will score a 70% or better.		
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Workplace Readiness

Students demonstrate the knowledge, skills, and abilities required to enter the workforce.

MEASURES	RESULTS	ACTIONS
<p><b>Capstone Capture the Flag Skills Assessment</b></p> <p>Student skills competition on Cisco 3 topics. Indirect - Other <i>Cisco 3: CVNP 2606</i></p> <p><b>Target</b></p> <p>70% of students will get 7/10 questions correct.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Capstone Capture the Flag Skills Assessment</b></p> <p>Student skills competition on ANOS topics. Direct - Assignment <i>Advanced Network Operating System: CVNP 2603</i></p> <p><b>Target</b></p> <p>70% of students will get 7/10 questions correct.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Capstone Capture the Flag Skills Assessment</b></p> <p>Students skills competition on Defensive Security Topics. Direct - Assignment <i>Defensive Security: CVNP 2625</i></p> <p><b>Target</b></p> <p>70% of students will get 7/10 questions correct.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>
<p><b>Capstone Capture the Flag Skills Assessment</b></p> <p>Student skills competition on Python/JSON topics. Direct - Assignment <i>Python/JSON: CVNP 2646</i></p> <p><b>Target</b></p> <p>70% of students will get 7/10 questions correct.</p>	<p><i>No results have been added.</i></p>	<p><i>No actions have been added.</i></p>