



COURSE OUTLINE: CYB201 - NETWORK+

Prepared:

Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	CYB201: NETWORK+
Program Number: Name	5911: CYBERSECURITY
Department:	PPP triOS
Academic Year:	2021-2022
Course Description:	In this course students will learn the theory and concepts required to successfully administer and troubleshoot wired and wireless TCP/IP-based networks. Through this course, students will be introduced to topics included on the CompTIA Network+ certification exams.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course:	<p>5911 - CYBERSECURITY</p> <p>VLO 1 Develop and implement cyber security solutions to protect network systems and data.</p> <p>VLO 2 Plan and implement security assessment methodologies, vulnerability management strategies and incident response procedures to generate and communicate security analysis reports and recommendations to the proper level of the organization.</p> <p>VLO 3 Recommend processes and procedures for maintenance and deployment of cyber security solutions.</p> <p>VLO 4 Select and deploy optimal security appliances and technologies to safeguard an organization's network.</p>
Essential Employability Skills (EES) addressed in this course:	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p>
Course Evaluation:	<p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>



Books and Required Resources:

CompTIA Network+ Study Guide by Todd Lammie
 Publisher: Sybex (Wiley)
 ISBN: 978-1 -119-02125-4

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Assess the basics of various network devices, services, applications, topologies, routing concepts, and protocols, and given a set of requirements, implement a basic network.	<p>NETWORK ARCHITECTURE</p> <p>1.1 Explain the functions and applications of various network devices.</p> <p>1.2 Review the use of networking services and applications.</p> <p>1.3 Install and configure networking services/applications.</p> <p>1.4 Explain the characteristics and benefits of various WAN technologies.</p> <p>1.5 Install and properly terminate various cable types and connectors using appropriate tools.</p> <p>1.6 Distinguish between common network topologies.</p> <p>1.7 Differentiate between network infrastructure implementations.</p> <p>1.8 Given a scenario, implement and configure the appropriate addressing schema.</p> <p>1.9 Explain the basics of routing concepts and protocols.</p> <p>1.10 Identify the basic elements of unified communication technologies.</p> <p>1.11 Evaluate technologies that support cloud and virtualization.</p> <p>1.12 Given a set of requirements, implement a basic network.</p>
Course Outcome 2	Learning Objectives for Course Outcome 2
Demonstrate network segmentation and effective network operations by using appropriate tools to gather metrics and manage a network.	<p>NETWORK OPERATIONS</p> <p>2.1 Use appropriate monitoring tools in different given scenarios</p> <p>2.2 Analyze metrics and reports from monitoring and tracking performance tools for various scenarios.</p> <p>2.3 Use appropriate resources to support configuration management for various scenarios.</p> <p>2.4 Explain the importance of implementing network segmentation.</p> <p>2.5 Install and apply patches and updates for various given scenarios</p> <p>2.6 Configure a switch using proper features for various scenarios.</p> <p>2.7 Install and configure wireless LAN infrastructure and implement the appropriate technologies in support of wireless capable devices.</p>
Course Outcome 3	Learning Objectives for Course Outcome 3
Appraise risk mitigation concepts, network threats, and network access control models, and demonstrate network hardening techniques.	<p>NETWORK SECURITY</p> <p>3.1 Review risk-related concepts.</p> <p>3.2 Examine common network vulnerabilities and threats.</p> <p>3.3 Implement network hardening techniques for various scenarios.</p> <p>3.4 Assess physical security controls.</p>



	3.5 Install and configure a basic firewall. 3.6 Explain the purpose of various network access control models. 3.7 Outline basic forensic concepts.
Course Outcome 4	Learning Objectives for Course Outcome 4
Effectively troubleshoot common network problems.	TROUBLESHOOTING 4.1 Implement network troubleshooting methodologies for various scenarios. 4.2 Analyze and interpret the output of troubleshooting tools. 4.3 Troubleshoot and resolve common wireless issues. 4.4 Troubleshoot and resolve common copper cable issues. 4.5 Troubleshoot and resolve common fiber cable issues. 4.6 Troubleshoot and resolve common network issues. 4.7 Troubleshoot and resolve common security issues. 4.8 Troubleshoot and resolve common WAN issues.
Course Outcome 5	Learning Objectives for Course Outcome 5
Select best practices for various network management scenarios and while adhering to industry standards.	INDUSTRY STANDARDS, PRACTICES, AND NETWORK THEORY 5.1 Analyze a scenario and determine the corresponding OSI layer. 5.2 Explain the basics of network theory and concepts. 5.3 Deploy the appropriate wireless standard for a given scenario. 5.4 Deploy the appropriate wired connectivity standard for a given scenario. 5.5 Implement the appropriate policies or procedures for various scenarios. 5.6 Assess safety practices. 5.7 Install and configure equipment in the appropriate location using best practices. 5.8 Explain the basics of change management procedures. 5.9 Review ports and protocols. 5.10 Configure and apply the appropriate ports and protocols for various scenarios.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Final Exam	60%
Professional Performance	10%
Quizzes, Tests & Projects	30%

Date:

June 30, 2022

Addendum:

Please refer to the course outline addendum on the Learning Management System for further information.

