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:	2022-2023
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:	56
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: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**5911 - CYBERSECURITY** VLO 1 Develop and implement cyber security solutions to protect network systems and data. VLO 2 Plan and implement security assessment methodologies, vulnerability management strategies and2.incident response procedures to generate and communicate security analysis reports and recommendations to the proper level of the organization. VLO 3 Recommend processes and procedures for maintenance and deployment of cyber security solutions. VLO 4 Select and deploy optimal security appliances and technologies to safeguard an organization's network.
Essential Employability Skills (EES) addressed in this course:	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. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects.
Course Evaluation:	Passing Grade: 50%, D

	A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
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.	NETWORKING FUNDAMENTALS 1.1 Compare and contrast the Open Systems Interconnection (OSI) model layers and encapsulation concepts. 1.2 Explain the characteristics of network topologies and network types. 1.3 Summarize the types of cables and connectors and explain which is the appropriate type for a solution. 1.4 Configure a subnet and use appropriate IP addressing schemes. 1.5 Explain common ports and protocols, their application, and encrypted alternatives. 1.6 Explain the use and purpose of network services. 1.7 Explain basic corporate and datacenter network architecture. 1.8 Summarize cloud concepts and connectivity options.
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.	NETWORK IMPLEMENTATIONS 2.1 Compare and contrast various devices, their features, and their appropriate placement on the network. 2.2 Compare and contrast routing technologies and bandwidth management concepts. 2.3 Configure and deploy common Ethernet switching features. 2.4 Install and configure the appropriate wireless standards and technologies.
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.	NETWORK OPERATIONS 3.1 Use the appropriate statistics and sensors to ensure network availability. 3.2 Explain the purpose of organizational documents and policies. 3.3 Explain high availability and disaster recovery concepts and summarize which is the best solution.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Select best practices for various network management scenarios and while adhering to industry standards.	NETWORK SECURITY 4.1 Explain common security concepts. 4.2 Compare and contrast common types of attacks. 4.3 Apply network hardening techniques. 4.4 Compare and contrast remote access methods and security implications. 4.5 Explain the importance of physical security.

Course Outcome 5	Learning Objectives for Course Outcome 5
Effectively troubleshoot common network problems.	NETWORK TROUBLESHOOTING 5.1 Explain the network troubleshooting methodology. 5.2 Troubleshoot common cable connectivity issues and select the appropriate tools. 5.3 Troubleshoot using the appropriate network software tools and commands. 5.4 Troubleshoot common wireless connectivity issues. 5.5 Troubleshoot general networking issues.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Final Exam	30%
Professional Performance	10%
Quizzes and Lab work	60%

Date: July 6, 2022

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