COURSE OUTLINE: CYB201 - NETWORK+

Prepared: IT Studies
Approved: Corey Meunier, Dean, Technology, Trades, and Apprenticeship

Course Code: Title	CYB201: NETWORK+
Program Number: Name	2198: CYBERSECURITY 5911: CYBERSECURITY
Department:	PPP triOS
Academic Year:	2023-2024
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.**	**2198 - 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 and 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 VLO 4 Select and deploy optimal security appliances and technologies to safeguard an organization's network **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	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.

this course:	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.
Other Course Evaluation & Assessment Requirements:	NOTES: A+ = 90-100% A = 80-89% B = 70-79% C = 60-69% D = 50-59% F < 50% Students are expected to be present to write all tests in class, unless otherwise specified. If a student is unable to write a test due to illness or a legitimate emergency, that student must contact the professor prior to class and provide reasoning. Should the student fail to contact the professor, the student shall receive a grade of zero on the test. If a student is not present 10 minutes after the test begins, the student will be considered absent and will not be given the privilege of writing the test. Students exhibiting academic dishonesty during a test will receive an automatic zero. Please refer to the College Academic Dishonesty Policy for further information. In order to qualify to write a missed test, the student shall have: a.) attended at least 75% of the classes to-date. b.) provide the professor an acceptable explanation for his/her absence. c.) be granted permission by the professor. NOTE: The missed test that has met the above criteria will be an end-of-semester test. Labs / assignments are due on the due-date indicated by the professor. Notice by the professor will be written on the labs / assignments and verbally announced in the class. Labs and assignments that are deemed late will have the following penalty: 1 day late - 10% reduction, 2 days late, 20% reduction, 3 days late, 30% reduction. After 3 days, no late assignments and labs will be accepted. It is the responsibility of the student who has missed a class to contact the professor immediately to obtain the lab / assignment. Students are responsible for doing their own work. Labs / assignments that are handed in and are deemed identical or near identical in content may constitute academic dishonesty and result in a zero grade. Students are expected to be present to write in-classroom quizzes. There are no make-up options for missed in-class quizzes. Students have the right to learn in an environment that is distraction-free, therefore, everyone is

expected to arrive on-time in class. Should lectures become distracted due to students walking in late, the professor may deny entry until the 1st break period, which is 50 minutes into the class or until that component of the lecture is complete.

The total overall average of test scores combined must be 50% or higher in order to qualify to pass this course. In addition, combined tests, Labs / Assignments total grade must be 50% or higher.

Books and Required Resources:

CompTIA Network+ Study Guide by Todd Lammie
Publisher: Sybex (Wiley) Edition: 5th
ISBN: 9781119811633

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	NETWORK SECURITY 4.1 Explain common security concepts.

	management scenarios and while adhering to industry standards.	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
Labs and Assignments	40%
Test #1	30%
Test #2	30%

Date: August 25, 2023

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