COURSE OUTLINE: CYB202 - LINUX ADMINISTRATION

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

Course Code: Title	CYB202: LINUX ADMINISTRATION
Program Number: Name	2198: CYBERSECURITY 5911: CYBERSECURITY
Department:	PPP triOS
Academic Year:	2023-2024
Course Description:	When properly configured, Linux can serve as one of the most stable, secure, and performance-oriented operating systems available. It serves as a key component in enterprise virtualization and cloud service offerings and is used extensively in the computer forensics and cybersecurity space. In this course, students will install, configure, and administer a Linux system. More specifically, they will gain a solid working knowledge of system and network administration, cloud technologies, security tools and scripting. At course completion, students will have covered many topics included on the CompTIA Linux+ certification exam.
Total Credits:	6
Hours/Week:	6
Total Hours:	84
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 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 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:

Purchase an External 1 TB USB SSD Hard Drive by Purchase a 1 TB External Solid-State Hard Drive

Linux+ and LPIC-1 Guide to Linux Certification by Jason Eckert
Publisher: Cengage Edition: 5th Edition
ISBN: 978-1-337-56979-8

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Select then Install a secure Linux OS for use within an enterprise environment.	1.1 Identify and contrast Linux Server vs Linux Desktop. 1.2 Contrast Windows Server vs Linux Server market share. 1.3 Demonstrate knowledge of Linux Distro varieties. 1.4 Explain the virtualization process for a Linux install. 1.5 Install a virtual Linux Server OS. 1.6 Configure then test network connection.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Navigate and manage the Linux filesystem and files.	2.1 Create, modify, and redirect files. 2.2 Manage services. 2.3 Summarize and explain server roles. 2.4 Automate and schedule jobs. 2.5 Explain the use and operation of Linux devices. 2.6 Compare and contrast Linux graphical user interfaces. 2.7 Conduct software installations, configurations, updates, and removals.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Manage the Linux shell (redirection, pipes, variables, env files, scripts).	3.1 Deploy and execute basic BASH scripts. 3.2 Carry out version control using Git. 3.3 Summarize orchestration processes and concepts. 3.4 Create automated startup files. 3.5 Create and apply aliases to key commands.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Administer the Linux OS, including network services and security.	4.1 Apply or acquire the appropriate user and/or group permissions and ownership for various scenarios. 4.2 Configure and implement appropriate access and authentication methods for various scenarios. 4.3 Summarize security best practices in a Linux environment. 4.4 Implement logging services. 4.5 Implement and configure Linux firewalls. 4.6 Backup, restore, and compress files.

Course Outcome 5	Learning Objectives for Course Outcome 5
Use diagnostics to optimize and troubleshoot Linux performance.	5.1 Analyze system properties and remediate accordingly for various scenarios. 5.2 Analyze system processes in order to optimize performance. 5.3 Analyze and troubleshoot user issues. 5.4 Analyze and troubleshoot application and hardware issues.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Lab Assignments and Quizzes	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.