COURSE OUTLINE: CYB202 - LINUX ADMINISTRATION

Prepared: IT Studies
Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	CYB202: LINUX ADMINISTRATION
Program Number: Name	5911: CYBERSECURITY
Department:	PPP triOS
Academic Year:	2021-2022
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 learn how to 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 more. At course completion, students will have covered most topics included on the CompTIA Linux+ certification exam.
Total Credits:	6
Hours/Week:	6
Total Hours:	90
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 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:	OTHER EVALUATION CONSIDERATIONS 1. In order to pass this course, the student must obtain an overall test/quiz average of 50% or better, as well as, an overall assignment average of 50% or better. A student who is not present to write a particular test/quiz, and does not notify the professor beforehand of their intended absence, may be subject to a zero grade on that test/quiz. 2. There will be no supplemental or make-up quizzes/tests in this course unless there are extenuating circumstances. 3. Assignments must be submitted by the due date according to the specifications of the professor. Late assignments will normally be given a mark of zero. Late assignments will only be marked at the discretion of the professor in cases where there were extenuating circumstances. 4. Any assignment/projects submissions, deemed to be copied, will result in a zero grade being assigned to all students involved in that particular incident. 5. It is the responsibility of the student to ask the professor to clarify any assignment requirements. 6. The professor reserves the right to modify the assessment process to meet any changing needs of the class. Attendance: Sault College is committed to student success. There is a direct correlation between academic performance and class attendance, therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session. It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers may not be granted admission to the room.
Books and Required Resources:	Linux+ and LPIC-1 Guide to Linux Certification by Jason Eckert Publisher: Cengage ISBN: 978-1-337-56979-8

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Install the Linux OS for use within an enterprise environment.	HARDWARE AND SYSTEM CONFIGURATION 1.1 Explain Linux boot process concepts. 1.2 Install, configure, and monitor kernel modules for various scenarios. 1.3 Configure and verify network connection parameters for various scenarios. 1.4 Manage storage in a Linux environment for various scenarios. 1.5 Review cloud and virtualization concepts and technologies. 1.6 Configure localization options for various scenarios.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Navigate and manage the Linux filesystem and files.	SYSTEMS OPERATION AND MAINTENANCE 2.1 Conduct software installations, configurations, updates, and removals. 2.2 Manage users and groups. 2.3 Create, modify, and redirect files. 2.4 Manage services. 2.5 Explain server roles.

	2.6 Automate and schedule jobs. 2.7 Explain the use and operation of Linux devices. 2.8 Examine Linux graphical user interfaces
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Manage the Linux shell (redirection, pipes, variables, env files, scripts).	AUTOMATION AND SCRIPTING 3.1 Deploy and execute basic BASH scripts. 3.2 Execute version control using Git. 3.3 Review orchestration processes and concepts.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Administer the Linux OS, including network services and security.	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 Exemplify 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.	LINUX TROUBLESHOOTING AND DIAGNOSTICS 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
Final Exam	30%
Final Project	20%
Professional Performance	10%
Quizzes	30%
vi Assignment	10%

Date: June 30, 2022

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