Department Master Syllabus
Camden County College
Blackwood, N.J. 08012

Course Title: Linux System Administration

Course Number: CIS-288

Department/Program Affiliation: Computer Information Systems

Date of Last Revision: April, 2018
(This Department Master Syllabus has been examined by the program/department faculty members and it is decided a change requiring a revision is necessary at this time.)

Credits: 3

Contact Hours: Lecture__3__ Lab__0__ Other _0___

Prerequisites: CIS-181, CSC-171, CST-102

Co-requisites: none

Course Description/Goals:
Common Linux administration topics will be covered in this course. Students will become familiar with administration tasks, and the tools used to accomplish those tasks. In addition, students will learn the various industry standards and established best practices for the efficient operation of Linux infrastructure. Students will be expected to have familiarity with the Linux command line (shell) and the VI text editor, which will be used throughout this course. This course is taught in a room with computers for the explicit teaching of a computer skill set using lecture. Computers are used as a lecture tool to provide demonstrations and illustrations of the technical concepts taught. Access to computers provides the students with the opportunity of interacting with the concepts presented. No graded assignments or mandatory exercises are completed during the lecture. Hands-on assignments are completed outside of class.

Course Student Learning Outcomes:
Upon Completion of this course, the student will be able to:

- Use the hierarchical file system to organize a Linux system, and ensure compliance with POSIX standards as assessed by tests, class participation, practical and written projects, and class participation
- Configure the boot manager, and various boot options in Linux as assessed by tests, class participation, practical and written projects, and class participation.
- Use Linux command options to for stream, redirect and piping standard input and output as assessed by tests, class participation, practical and written projects, and class participation.
- Monitor and manage tasks using the various commands in Linux as assessed by tests, class participation, practical and written projects, and class participation.

- Use regular expressions to search and process text, configuration and log files as assessed by tests, class participation, practical and written projects, and class participation.
- Configured X-Windows for various distributions of Linux as assessed by tests, class participation, practical and written projects, and class participation.
- Manage server disk quotas to ensure appropriate usage by applications and users as assessed by tests, class participation, practical and written projects, and class participation.
- Configure ownership and permissions of files and resources in Linux as assessed by tests, class participation, practical and written projects, and class participation.
- Determine and configure appropriate periodic tasks, and configure their execution using the various tools available on most Linux systems as assessed by tests, class participation, practical and written projects, and class participation.
- Configure the Network Time Protocol within Linux systems, along with appropriate localization of time/date formats as assessed by tests, class participation, practical and written projects, and class participation.
- Use file links for administrative simplification of files, and compliance with filesystem standards as assessed by tests, class participation, practical and written projects, and class participation.
- Manage users and groups for multi-user systems, and manage tools and utilities for creating and managing users and their resources as assessed by tests, class participation, practical and written projects, and class participation.
- Install and update packages using a package manager, such as the Red Hat Package manager, YUM, and Apt-Get (Debian) as assessed by tests, class participation, practical and written projects, and class participation.

Course Outline:

- System Initialization and X Windows
- Managing Linux Processes
- Common Administrative Tasks
- Compression, System Backup and Software Installation
- Network Configuration
- Troubleshooting and Performance

Course Activities:

The classroom activities will include formal and informal lectures supplemented with demonstrations on GNU/Linux servers. All major topics will have assigned practical activities which must be completed outside of class, and assessments to measure the student's comprehension of the course objectives.

Assessment of Course Student Learning Outcomes:

The student will be evaluated on the degree to which the learning outcomes are achieved. A variety of methods will be used such as tests, class participation, practical and written projects, and class participation.

Course Materials:

Textbooks(s): Linux+ Guide to Linux Certification, 4th Edition, Jason Eckert. Cengage 2016, ISBN: : 978-1-305-10714-4

Supplemental Materials: This information will be provided by the instructor on the first day of class.