

**HOSTOS COMMUNITY COLLEGE  
DEPARTMENT OF MATHEMATICS  
AND COMPUTER SCIENCE**

**CST 250: SYSTEM ADMINISTRATION (UNIX/LINUX)**

**Credit Hours: 3.0**

**Lab Hours: 2.0**

**Class Hours: 2.0**

**Prerequisite: CST 220**

**Course Description:**

This course introduces students to fundamental networking administration concepts and principles and ideas of system administration common to various Network Operating Systems. It is designed to provide students with a broad understanding of Unix/Linux operating systems. Network administration concepts are demonstrated using Linux: installation and configuration, shell commands and programming, user and group management, establishing basic security; configuring and managing data storage, system monitoring, and troubleshooting. All concepts are demonstrated through laboratory assignments. A special set of labs has been developed to provide each student with the Administrator level of access to the operating system to perform network administration tasks.

**Required Text:**

The Complete Guide to Linux System Administration by Nick Wells.

ISBN-10: 0619216166      ISBN-13: 978-0619216160

**Grades:      A, A-, B+, B, B-, C+, C, D, F**

**Course Objectives:**

- Demonstrate understanding of the principles of System Administration, its goals, and common practices
- Demonstrate understanding of major networking models, protocols, TCP/IP networks, and related terminology
- Demonstrate practical skills in Unix/Linux installation and configuration
- Demonstrate understanding of the Unix/Linux file system and management of data storage

- Secure a Unix/Linux operating system and network, and implement use group policies
- Demonstrate understanding of Linux networking and the tasks of server .and network monitoring and troubleshooting; demonstrate skills in using related software tools
- Install applications in a Linux environment
- Demonstrate understanding of Unix/Linux shell and shell scripting

**Students learning outcomes:**

1. Students will understand Linux and Unix Operating Systems and their historical significance and modern usage.
2. Students will demonstrate proficiency in installing Linux OS and configuring it for specific usage,including the creation and management of user accounts and installation of software.
3. Students will demonstrate proficiency in creating and managing files and directories, setting and using file permissions, and navigating the Unix/Linux file system.
4. Students will demonstrate proficiency in controlling Linux OS from Command Line Interface (CLI) as well as Graphical User Interface (GUI).
5. Students will demonstrate proficiency in performing operations on Linux OS as a user as well as system administrator, which includes security control.
6. Students will demonstrate proficiency in writing sed and awk commands for file manipulation, as well as creating bash shell scripts.

**Course Outline:**

Week	Topic
1	Introduction to Unix/Linux Operating Systems GettingStarted with Fedora
2	Installing Linux
3	Unix/Linux Shell
4	Users and File Systems
5	Review and Test 1
6	How Linux Works / Desktop Environments
7	Processes / Linux Applications
8	System Initialization/ Dual-Boot Systems
9	Review and Test 2
10	Package Management

11	Configuring and Administering Linux
12	Unix/Linux Networking
B	Setting up Network Services/ Linux KernelTest3
14	Advanced Shell Usage and Shell Scripts
15	Final Projects & Review
16	Final Exam