# Course Information Form (CIF)

**Course Code:** CSC 171

**Course Title:** Linux Installation and Administration

**Department:** Business/Computer Science and Technologies
**Effective Date:** Summer 2026
**PCS Code:** 1.2 - Occupational/Technical Instruction
**CIP Code:** 11.0901
**Repeatability:** 0

## Credit Hours

**Catalog Notation:** 2-2-3
**Credit Hour Distribution:**

| Lecture: 2 | Lab: 2 | Clinical: 0 | **Total: 3** |
|---|---|---|---|

## General Course Information

### Catalog Description

Fundamental Linux system administration, including X-windowing systems, environment variables, user and group administration, file systems, booting and partitioning, umask and quotas, process management, libraries common to all flavors of Linux.

### General Course Objectives

- Cover Linux
- Basic GNU and Unix Commands
- Filesystem Hierarchy
- Boot, Initialization, Shutdown, Run
- Documentation and Administrative Tasks

### Minimum Placement Levels

| English | Reading | Math |
|---|---|---|
| None | None | None |

### Prerequisites

Credit in CSC 118 with a grade of C or higher

### Methods of Evaluation

2 exams, 2 quizzes, 30 lab assignments. Students will run their own production server for the duration of the class.

### Instructional Materials and Additional Supplies

UNIX and Linux System Administration Handbook, 4th Edition. Nemeth, Snyder, Hein, and Whaley. ISBN-13:978-0131480056 ISBN-10:0131480057

## Course Content

### General Learning Outcomes (GLOs)

- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

### Course Segments and Student Learning Outcomes

| Course Segment | Learning Outcomes | Lecture Hours | Lab Hours | Clinical Hours |
|---|---|---|---|---|
| GNU and Unix Commands | 1. Employ the Linux command line environment for effective system administration, including environment variables, command history, editing, invoking commands, command substitution, and performing basic file management.<br>2. Employ cron and scripts to manage system administration tasks, monitor, and kill system processes.<br>3. Employ commands to manage process execution priorities. | 6 | 6 | 0 |
| Devices and Linux File Systems | 1. Employ commands to create partitions and file systems.<br>2. Employ commands and scripts to manage the integrity of file systems.<br>3. Employ commands and scripts to formulate a system for the control of mounting and unmounting file systems.<br>4. Employ commands and scripts to deploy and monitor disk quotas.<br>5. Employ commands and scripts to manage file access controls, links, and ownership.<br>6. State the name and location of system files controlling configuration in the correct place. | 4 | 4 | 0 |
| Booting, Initialization, Shutdown, and Runlevels | 1. Employ commands and scripts to manage the system boot process.<br>2. Demonstrate how to set up the correct BIOS settings for all devices.<br>3. Demonstrate how to change runlevels and shut down or reboot the system.<br>4. Demonstrate how to configure a system boot-loader. | 4 | 4 | 0 |
| Documentation | 1. Employ commands and scripts to manage and create local system documentation.<br>2. Demonstrate how to select appropriate Linux documentation.<br>3. Construct local system documentation websites.<br>4. Identify user needs and provide support. | 2 | 2 | 0 |
| Administrative Tasks | 1. Employ commands and scripts to manage users and group accounts and related system files.<br>2. Create and manage user environment variables for efficient user access to services.<br>3. Employ commands and scripts to examine and configure system log files for administrative and security needs.<br>4. Employ commands and scripts to automate system administrative tasks using scheduling.<br>5. Formulate and deploy an effective system backup strategy. | 10 | 10 | 0 |
| Install and Configure the X-Windowing Interface | 1. Employ commands and scripts to set up and configure a system running X.<br>2. Employ commands and scripts to configure an X display manager.<br>3. Identify current hardware and its compatibility with X.<br>4. Construct a custom X environment for users. | 4 | 4 | 0 |

### Total Contact Hours

| Lecture Hours | Lab Hours | Clinical Hours |
|---|---|---|
| 30 | 30 | 0 |