Warren County Community College

# CSC 150 Operating Systems Fundamentals: UNIX

## Course Master Syllabus

## Course Information

**Catalog Description:** In this course, students are introduced to standard operating system features (file, device, process managers, editors, mail systems, command language, and utilities) using the UNIX operating system.

**Prerequisite(s):** CSC 103 – Introduction to Computing

**Corequisite(s):** None

**Credits:** 3

**Hours:** 2 lecture and 2 lab

**Required Text(s):**

**Supplemental Materials:**

## Instructor Information

**Instructor's Name:**

**Contact Information:**

**Office Hours:**

## Program Goals

1. Demonstrate foundational knowledge of computer systems, including their components, functions, and applications.
2. Apply fundamental technology skills to solve problems and complete tasks in various computing environments.
3. Apply programming principles to solve problems using modern development tools.

4. Analyze and manage data communications and networking systems.
5. Apply critical thinking and data analysis techniques to solve computational problems and make informed decisions.
6. Design and develop interactive web content and apps using modern programming languages and development tools

## Class Core Competencies

The following core competencies are embedded in this curriculum:

- Communicate effectively in both speech and writing
- Use scientific method of inquiry, through the acquisition of scientific knowledge
- Use computer systems or other appropriate forms of technology to achieve educational and personal goals
- Understand ethical issues and situations
- Address an information need by locating, evaluation and effectively using information.

## Class Learning Assessment

| Student Learning Outcomes | Suggested Means of Assessment |
|---|---|
| Evaluate and explain the general and specific setup and management of UNIX files | Lab assignments/projects/exams |
| Detail how the UNIX operating system affects the world wide web | Lab assignments/projects/exams |
| Identify and compare the different versions of the UNIX Operating System | Lab assignments/projects/exams |
| Identify several of the UNIX utilities and detail their specific function. | Lab assignments/projects/exams |
| Identify and compare the common types of networks found in today’s computer systems | Lab assignments/projects/exams |

## Grading System

| Letter Grade | Percentage Range |
|---|---|
| A | 90 to 100 percent |
| B Plus (B+) | 87 to 89.9 percent |
| B | 80 to 86.9 percent |
| C Plus (C+) | 77 to 79.9 percent |
| C | 70 to 76.9 percent |
| D | 60 to 69.9 percent |
| F | Below 60 percent |

## College Information

**Disability Services**
Disability Services Webpage

**Statement and Policy on Cheating, Plagiarism, and Academic Conduct**
Academic Conduct Policy (Policy 304) [PDF]

Students are required to perform all the work specified by the instructor and are responsible for the content and integrity of all academic work submitted. A violation of academic integrity will occur if a student: (1) knowingly represents work of others as one's own, (2) uses or obtains unauthorized assistance in any academic work, (3) gives fraudulent assistance to another student, or (4) furnishes false information or other misuse of college documents.

Unauthorized use of Artificial Intelligence (AI) is prohibited unless the instructor explicitly permits it in the syllabus or assignments. If tools such as ChatGPT are permitted by an instructor to be used for an assignment, they should be used with caution and with proper citation. In all such cases, you may only use the specific tools identified as acceptable and you must adhere to the College's standards for attribution, validation, and transparency.

In cases of suspected violation of academic integrity, the incident is to be reported to the Office of Academics. A student found guilty of violating the rule of academic integrity by the Vice President of Academics will be considered to have failed in personal obligation to the College; such failure will be subject to disciplinary action by the College. Unless otherwise notified, the instructor will allow students who are pending disciplinary action to attend class.

**Tutoring and Testing at the Instructional Support Center (ISC)**

- Instructional Support Center (ISC) Webpage

**WCCC Library Services**

- WCCC Library Website

**Citation Styles and Formatting**

Work submitted for any Warren County Community College course must conform to the required formatting and citation style that are specified by the instructor. The Library and Instructional Support Center can assist students with formatting and citations for assignments and papers.

**WCCC Attendance Expectations**

The College expects students to attend and participate in all classes. This involves sharing discussions and lectures in class, as well as interacting with other students. Grades are based on the quality of work students complete in meeting the requirements for a particular course, as stated in the course syllabus and catalog description. Attendance, among other factors, may be an additional criterion for assigning grades. Students should realize that they are responsible for all class meetings and that work missed because of absences may affect their grades. Attendance in online classes is determined by the completion of assignments/ tests. Students who have not completed any assignments or tests will be considered non-attending and receive an NF grade in online classes.

**Class Attendance Expectations**

## Topical Outline

I. UNIX System Overview
   a. General UNIX topics: Shell, utilities, security, kernel.
   b. UNIX popularity and acceptance and its future
   c. Popular versions of the UNIX operating system
   d. Additional UNIX system features
II. UNIX Basic Operations
   a. Accessing the UNIX System
   b. Basic text editing using the VI editor
   c. UNIX system commands
III. UNIX Utilities
   a. Popular UNIX utilities such as talk, mail, and finger

b. Useful UNIX utilities such as man, date, and grep

IV. UNIX File Structure
   a. Hierarchical filing systems
   b. Directories
   c. Access permissions

V. UNIX Shell
   a. Command line syntax
   b. Standard input and output
   c. I/O redirection and piping
   d. Multitasking

VI. Networking
   a. Common types of networks
   b. Communication over a network
   c. Network utilities and services
   d. Networking on the world wide web

VII. UNIX: VI Editor
   a. Basic VI editor operations
   b. Command mode and input mode
   c. Miscellaneous basic and advanced editor commands
   d. File manipulation and access

VIII. UNIX C Shell
   a. History and similarities/differences with the other shells
   b. Basic command syntax and operation
   c. C Shell variable manipulation
   d. C Shell control structures
   e. Built-in commands

IX. UNIX Programming Tools
   a. C Programming and the make utility
   b. Source code management using SCCS files

## Grading Methods

| Assignment | Points/Percentage |
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| Assignment | Points/Percentage |
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## Class Itinerary

| Week / Unit | Topic | Readings/Assignments |
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