

**LAGUARDIA COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS, ENGINEERING, and COMPUTER SCIENCE**

**MAC232 UNIX Network Operating System
3 credits; 4 hours (3 lecture, 1 lab)**

This course is an introduction to the UNIX operating system. It is designed to teach students how to effectively integrate UNIX utilities and system calls within network administration. Additionally, it will teach students how to customize work-stations through the use of LAN management and administrative functions. Upon completion of this course, students may choose to take the SCO ACE certification exam.

Prerequisite: CSE099, ENA099 or ENG099, MAC230, MAT096

Instructional Objectives:

1. To Introduce the students to the common characteristics of the UNIX operating system.
2. To introduce the students to the UNIX file system.
3. To introduce the students to the UNIX shell in order to create new commands, command arguments, shell variables. Elementary control flow, and I/O redirection.
4. To introduce the student to system calls in order to control input-output, file creation, error processing and directories.
5. To familiarize students with UNIXware command administration.
6. To show students how to install a UNIX based LAB workstation.
7. To show students how to create user accounts, manage I/O devices, and solve network problems.
8. To introduce students to remote access configuration.
9. To introduce students to the Internet via TCP/IP using the UNIX system.
10. To Provide the student with different methods of assessment throughout the course, including written exams, group laboratory assignments, and a final project.

Performance Objectives:

1. Describe common characteristics of the UNIX operating system.
2. Explain the UNIX file system.
3. To write simple programs using the UNIX shell in order to create new commands, command arguments, shell variables, elementary control flow, and I/O redirection.
4. Demonstrate system calls in order to control input-output, file creation, error processing and directories.
5. Demonstrate, through UNIXware, the supervisory administrative commands.
6. Demonstrate and explain how to install a UNIX based LAN workstation.
7. To demonstrate how to create user accounts, manage I/O devices, and solve network problems.
8. Explain how to configure the workstation for remote access.
9. Explore the Internet via TCP/IP using the UNIX system.
10. Demonstrate knowledge of the course material through written exams, group laboratory assignments, and final projects.

Grading Standards:

Midterm	30%
5 Lab Exercises	20%
Group Lab Project	20%
Final	30%
Total	100%

Book:

UNIX Unbounded: A Beginning Approach, 5th Edition, by Amir Afzal; Publisher: Prentice Hall, Copyright: 2008, Format: Paper; 553 pp

Published: 2008

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Course Syllabus:**Week 1**

Introduction to UNIX

UNIX as an Operating System

Components parts of the UNIX Operating Systems

Simple UNIX Commands

Week 2

The UNIX editor

The UNIX File System

File basics

The File Structure

The directory hierarchies

Week 3

The UNIX Shell

Command Line Structure

Metacharacters

Creating New Commands

Commands, Arguments and Parameters

More UNIX Shell

Week 4

Shell Variables

I/O Redirection

Filters

Week 5

Shell Programming

Simple Program Commands

Week 6

Batch Programming

Running and Executing Programs

Week 7

UNIX Systems Administration

Introduction to System Calls

Creating User Accounts

Week 8

Functions of the LAN Manager

Administrative rights and user control

Managing I/O devices

Network Installation and Configuration

Week 9

Software Installation

Troubleshooting the Network

User Administration

Week 10

The TCP/IP Protocol

General Concepts

Week 11

More TCP/IP Protocol

Using TCP/IP to surf the Internet

Week 12

Certification Exam Preparation and Review

Week 13

Final Exam