

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

**MAC252 Advance UNIX System Administration  
3 credits; 4 hours (3 lecture, 1 lab)**

This course is a continuation of the UNIX Network Operating System course. It provides students with the practical skill needed to serve as a UNIX system administrator. Topics include login scripts, user administration and security, operating system installation and maintenance, installation of patches and programs, and maintenance and troubleshooting of servers and workstations. Students are encouraged to take the UNIX System Administration certification exam.

**Prerequisite:** MAC232, ENG101, CSE099, ENA099/ENG099, MAT096

**Instructional Objectives:**

1. To Introduce the functions of a UNIX System Administrator.
2. Enable students to install the UNIX operating system on a various types of computers.
3. Provide the student with the ability to troubleshoot UNIX systems including servers and workstations.
4. Reinforce elementary and advances UNIX script writing.
5. To familiarize the student with installations and maintenance of patches and programs.
6. Enable students to set up a Web server.
7. To provide the students with the ability to set up systems which allow UNIX to act like a Windows Server.
8. To Provide the student with the skills to become a UNIX System Administrator.

**Performance Objectives:**

1. Identify the functions of a UNIX System Administrator.
2. Install the UNIX Operating System on various types of computers systems.
3. Analyze computer systems for problems and troubleshooting servers and workstations to solve those problems.
4. Write login scripts needed for frequently used administrative functions.
5. Identify needed patches and programs and install them on the computer system.
6. Prepare the computer system to set up a Web server.
7. Illustrate how UNIX can utilize the Windows Server environment without changing operating systems.
8. Identify and demonstrate the skills needed and utilized by a UNIX System Administrator

**Grading Standards:**

3 Written Quizzes (20% each)	60%
4 Lab Assignments (5%)	20%
Final	20%
Total	100%

**Book:**

RHCSA/RHCE Red Hat Certified Engineer Linux Study Guide (Exam RH302) (Certification Press), 5<sup>th</sup> Edition, by Michael Jiang; McGraw-Hill/Osborne; Publisher: McGraw-Hill, Copyright: 2008, Format: Paper; 848 pp  
Published: 2008  
ISBN-10: 978-0-07-226454-3  
ISBN-13: 0-07-226454-8

**Course Syllabus:****Week 1**

RHCE Prerequisites  
Preparation for UNIX Installation  
Hardware and Installation Checklist  
Installation of Upgrades and Patches  
The Boot process

**Week 2**

Installation of additional programs  
Basic System Administration  
Setting up the GUI  
Linux File System Administration  
Package Management

**Week 3**

User Administration  
System Administration Tools  
Adding additional hard drives: Performing system backups.

**Week 4**

Administering users, users rights and security  
Writing administrative login scripts  
Kernel Services and Configuration

**Week 5**

Network File-Sharing Services  
Domain Name Service  
Setting up intranet and Internet services: Web servers; Setting up domains and virtual domains.  
Apache and Squid

**Week 6**

Electronic Mail  
Setting up email for users via POP, IMAP and other relevant subtopics.

**Week 7**

The X Windows System  
UNIX and Windows Connectivity; Printer and File Sharing with Window Operating Systems

**Week 8**

Security Services

**Week 9**

Software Installation  
Other User Administration Tasks

**Week 10**

Troubleshooting the Network

**Week 11**

Other Networking Services

**Week 12**

Certification Exam Preparation and Review

Sample Exam 1

Sample Exam 2

**Week 13**

Final Exam