

BOROUGH OF MANHATTAN COMMUNITY COLLEGE
City University of New York

Department of Computer Information Systems
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UNIX
CIS 440
Spring 2012
Credits: 3

Class hours: 2
Lab hours: 2

Course Description: This course is designed to provide a basic knowledge of operating systems with particular emphasis in the installation and operation of the UNIX operating system.

Prerequisites: Basic skills- ENG 095; ESL 095; ACR 095; MAT 012/ 051; CIS 255 or Departmental approval

Student Learning Outcomes:

- **Outcome:** understand Unix/Linux file system
Assessment: exam questions and lab exercises
- **Outcome:** demonstrate basic use of terminal/console commands
Assessment: exam questions, lab exercises and Projects
- **Outcome:** understand basic shell scripting
Assessment: lab exercises and/or projects
- **Outcome:** perform software installation & configuration
Assessment: exam questions, lab exercises and/or projects
- **Outcome:** understand basic operating system security
Assessment: exam questions and lab exercises
- **Outcome:** setup and configure a basic Unix/Linux network
Assessment: exam questions and lab exercises

General Education Outcomes and Assessment:

- **Quantitative Skills** – Students will use quantitative skills and concepts and methods of mathematics to solve problems
Assessment: Use formulas and concepts of mathematics to solve problems in programming assignments
- **Information and Technology Literacy** – Students will collect, evaluate and interpret information and effectively use information technologies
Assessment: Use a high-level computer programming language to create application software

Required Text & Readings:

Textbook: **Unix and Linux (Visual QuickStart Guide Series)**
Author: **Deborah S. Ray , Eric J. Ray, 4th Edition**
Pub: **Peachpit Press**
ISBN-10/13: **ISBN-10: 0321636783/ ISBN-13: 978-0321636782**

Other Resources/Technologies(if applicable): VMWare Player / 2-GB USB

Evaluation & Requirements of Students

Written Examination(s)	30%
Lab Examination(s)	30%
Assignment(s)	10%
Attendance/Evaluation	10%
Projects/Final	<u>20%</u>
Total:	100%

Outline of Topics:

- Operating System Basics
 - Operating System(OS) Role
 - Unix-like Operating Systems
 - Terminal/Shell Environment(Bash, Korn)
 - Reference Manuals(man)
- X Window System Basics
 - X-Server/Client
 - Desktop Environments(GNOME/KDE)
 - GNOME/KDE Applications
 - Terminal versus Graphical Applications
- File System Basics
 - Linux Tree File Structure(Ex: tree cmd)
 - File Management Commands
 - Ex: pwd, ls, cd, cp, mv, rm, rmdir, mkdir
 - Text Editors(Ex: vi / pico), less, cat, touch
 - Mounting Basics(Ex: mount, umount)
 - Permission/Ownership(chmod, chown/chgrp)
 - Soft/Hard File Links(ln)
 - Virtual File Systems(Optional)
- File Search and Manipulation
 - Hidden Files
 - File Search(Ex: find, grep, ls, sort)
 - File Content Manipulation
 - Ex: sed, head, tail, cut
- Basic Communication Commands
 - Ex: mesg, talk, write, mail, mutt, pine, etc
- Remote Access Commands(Ex: ssh, ftp, scp, wget)
- Software Installation & Configuration
 - Software Management Applications
 - Internet Applications(Ex: apache, ftp, ssh)
- User Management/ Commands
 - User Commands
 - Ex: who, whoami, history, passwd
 - User Management Commands
 - Ex: useradd, userdel, usermod
 - The substitute user(su) command
- Bash Shell Scripting
 - Input/Output Re-direction and Piping
 - Creating/Executing Scripts
 - Executing in the background(with &)
 - Flow-Control
- Basic System Administration
 - OS Installation
 - File System Types(Ex: ext3,ext4, swap)
 - Partitioning/Formatting
 - Ex: gparted, fdisk, mkfs, fsck
 - Archiving/Backups(Ex: tar,zip, gzip,gunzip)
 - Process Management(Ex: top, kill, ps, nice)
 - System Information Commands(Ex: du, df)
 - Viewing Log Files
- Introduction to Networking
 - Basic Networking Commands/Configuration
 - Ex: ifconfig, route, ip
 - Network File System(NFS)
 - Samba(Optional)
- Security Topics
 - Strong Password Guidelines
 - Root Security(root access/alias and sudo)
 - Access Control Methods
 - Attribute/Rule/Role/Discretionary

College Attendance Policy

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

Academic Adjustments for Students with Disabilities

Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities. BMCC is committed to providing equal access to all programs and curricula to all students.

BMCC Policy on Plagiarism and Academic Integrity Statement

Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's web site, www.bmcc.cuny.edu. For further information on integrity and behavior, please consult the college bulletin (also available online).