CS 81.21 Course Outline as of Spring 2019

CATALOG INFORMATION

Dept and Nbr: CS 81.21 Title: INTRODUCTION TO LINUX
Full Title: Introduction to Linux
Last Reviewed: 2/12/2024

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	CIS 50.71

Catalog Description:
This course will introduce the student to the basic concepts of the Linux Operating System. Completion of the course will provide a basic working knowledge of: free and open-source software and licenses, essential Linux commands, login and logout sequences, setting passwords, hardware, processes, programs and the components of the Linux Operating System, creating and restoring compressed backups and archives, system security, users/groups and file permissions for public and private directories, creating and running simple scripts and basic system administration.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: This course will introduce the student to the basic concepts of the Linux Operating System. Completion of the course will provide a basic working knowledge of: free and open-

source software and licenses, essential Linux commands, login and logout sequences, setting passwords, hardware, processes, programs and the components of the Linux Operating System, creating and restoring compressed backups and archives, system security, users/groups and file permissions for public and private directories, creating and running simple scripts and basic system administration. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1999	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Operate a standard Linux shell using essential Linux commands, demonstrating increasing comprehension of computer operating system processes.
2. Demonstrate proficiency with user account controls, file system management and system security.
3. Demonstrate the ability to find and understand Linux documentation.

Objectives:
At the conclusion of this course, the student should be able to:
1. Organize and manage files and directories.
2. Create, modify, and combine documents.
3. Produce and run shell scripts and programs.
4. Evaluate and customize default system parameters.
5. Design, establish, and maintain multiple user accounts and file system.
6. Utilize windowing systems.
7. Transfer information between systems.
8. Analyze and maintain system security.
9. Find and evaluate information about Linux from disparate sources.

Topics and Scope:

I. Using Accounts
   A. Obtaining an account
   B. Logging in
   C. User names
   D. Passwords
   E. Directories
II. Linux System Basics
   A. Entering Shell commands
   B. Creating files and directories
   C. Navigating the file system
III. Basic Text Editing with vi
   A. Command vs. Insert mode
   B. Adding Text
   C. Deleting text
   D. Changing text
   E. Saving a text file
IV. I/O (Input/Output) Redirection
   A. Input
   B. Output
   C. Piping
V. Permissions
   A. Read, write, execute
   B. User, Group, Other
   C. Directory permissions
VI. System Processes
   A. Listing
   B. Controlling
   C. Terminating
VII. Getting Information on Linux
   A. "man" pages
   B. "help"
   C. "info"
   D. FTP (file transfer protocol)
   E. Newsgroups
   F. Web searching
VIII. Symbolic Links
   A. Hard vs. symbolic links
   B. Creating links
   C. Using links
IX. Tar and Compress
   A. Tape backups with tar
   B. File packages with tar
   C. Compress
   D. Gzip
   E. Other compression utilities
X. Text File Utilities
   A. Head
   B. Tail
   C. Cut
   D. Paste
   E. Tr
   F. Sort

G. Grep
H. Using pipelines with text utilities

XI. Introduction to Shell Scripts
A. "Bash" and other varieties of shell interpreters
B. Shell scripts and programming
C. Making shell scripts
D. Running scripts
E. Script permissions
F. The path variable and scripts
G. Special script commands

XII. The .profile File
A. The .profile command and other startup scripts
B. How .profile works
C. Commands to include in .profile

XIII. System Administration and Organizational Politics

XIV. Creating User Accounts
A. The password file
B. Home directories
C. Mail directories
D. Directory permissions
E. Global permissions

XV. Mounting File Systems
A. Varieties of Linux file systems
B. Creating a file system on disk
C. Mounting file systems
D. Unmounting
E. Checking and repairing file system integrity

XVI. X Windows
A. Installing X Windows
B. Varieties of X Windows interfaces
C. Using X Windows programs
D. Common X Windows programs

Assignment:

1. Hands-on exercises to demonstrate each topic
2. Reading approximately 30 pages weekly from the textbook
3. Exams and quizzes (2 - 4)
4. Participate in class discussion topics

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Hands-on exercises	Problem solving 20 - 60%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Exams and quizzes	Exams 40 - 80%

Other: Includes any assessment tools that do not logically fit into the above categories.

Participation and attendance	Other Category 0 - 10%

Representative Textbooks and Materials:
Linux: The Ultimate Beginners Guide to Linux Operating System. Tale, Steve. CreateSpace Independent Publishing Platform. 2017
NDG Linux Essentials online course material, Network Development Group: 2014