GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: CSIS 48 DIVISION: 50 ALSO LISTED AS:

TERM EFFECTIVE: Spring 2022 CURRICULUM APPROVAL DATE: 05/10/2022

SHORT TITLE: UNIX/LINUX OP. SYS

LONG TITLE: UNIX, Linux Operating System

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
4	18	Lecture:	3	54
		Lab:	3	54
		Other:	0	0
		Total:	6	108

Out of Class Hrs: 108.00
Total Learning Hrs: 216.00

COURSE DESCRIPTION:

This course will provide the basics of the UNIX/Linux operating system, including the history and the use of UNIX/Linux with hands-on experience using commands and files. Topics to be covered include basic UNIX/Linux commands, text editing, files and directories, electronic mail, pipes and filters, and shell programming. This course has the option of a letter grade or pass/no pass. ADVISORY: CSIS 1 or CSIS 2 or equivalent computer experience.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES
- L - Standard Letter Grade
- P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion
03 - Lecture/Laboratory
04 - Laboratory/Studio/Activity
047 - Laboratory - LEH 0.7
05 - Hybrid
71 - Dist. Ed Internet Simultaneous
72 - Dist. Ed Internet Delayed
73 - Dist. Ed Internet Delayed LAB
737 - Dist. Ed Internet LAB-LEH 0.7

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Explain and use UNIX/Linux Operating System utilities and shell features for basic file manipulation, networking, communication, and security administration.
2. Create BASH shell scripts with conditional execution.
3. Compile and run sample programs using CLI mode on a terminal.

COURSE OBJECTIVES:

By the end of this course, a student should:

1. Explain the history and origins of the Linux operating system.
2. Install the operating system.
3. Perform basic system configurations.
4. Run applications and do file management.
5. Use the graphical and command line user interfaces.
6. Use editors and run scripts.
7. Explain and utilize file system security.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 05/10/2022

LECTURE CONTENT:

6 Hours

Lecture: History of the UNIX, evolution of UNIX, flavors of UNIX, importance of UNIX, and UNIX use today. UNIX features: multitasking, multi-user, multiprocessing, device independence. Relation to DOS and Windows. Getting started on UNIX: Logging in, passwords, prompts and logging out. UNIX control characters. Changing passwords and the password file. Simple UNIX shell commands, UNIX syntax. Using the line editor, command mode and insert mode, line commands, insert commands, search and substitute commands.

6 Hours

Lecture: UNIX contributions: history, redirection, pipes and filters. Quiz on the line editor. Using the visual editor vi, vi commands, command syntax.

6 Hours

Lecture: UNIX and the Internet: Using e-mail, file transferring, and remote logins. Quiz on UNIX commands, including history, redirection and pipes.

6 Hours

Lecture: Quiz on vi editor. UNIX file commands. Accessing files and directories. UNIX file system: directory trees, hidden files, file types.

8 Hours

Lecture: Quiz on file and directory commands. Advanced editing techniques. Editing pattern matching, buffers, magic characters, shell escapes. Use grep and egrep commands. Introduction to sed and awk.

7 Hours

Lecture: UNIX dot (secret files) Filename wildcards. Introduction to pattern matching. Writing Perl programs. Quiz on advanced editing.

7 Hours

Lecture: Using bc and dc calculators. Using sed to edit files. Using awk to process files. Writing and compiling a C/C++ program.

6 Hours

Lecture: Using and writing shell programs. The different shells: Bourne, c-shell, and Korn. Shell program variables, loops and selections statements. Advanced shell statements: case, debugging, environment, variables. Using the X Window System. X basics, the Window Manager and X client programs.

2 Hours

Final Exam.

LAB CONTENT:

6 Hours

Lab: Lab Exercises: Log into the UNIX system. Get familiar with UNIX commands and command syntax. Create several files using the line editor.

6 Hours

Lab: Lab Exercises: Do a hands-on editing project/test using the line editor. Use history to repeat commands and reuse arguments. Use redirection to save and modify output. Use pipes to process output with new commands. Using the vi editor create several documents.

6 Hours

Lab: Lab Exercises: Do a hands-on editing project/test using the vi editor. Use e-mail to send and receive mail to other students. Use ftp to retrieve and store files. Use telnet and rlogin to log into other systems.

6 Hours

Lab: Lab Exercises: Do a hands-on test for e-mail. Use UNIX commands to copy, move, link files and directories. Set up and use UNIX directories.

8 Hours

Lab: Lab Exercise: Use advanced editing techniques to modify files. Use grep with advanced pattern matching commands. Write a short sed editing script. Write a short awk script.

7 Hours

Lab: Lab Exercises: Modify and create your own dot files for shell, e-mail, and editor. Write and run a Perl program. Practice setting up filenames so wildcards can be used. Go over Perl notes. Set up a Perl program. Look up Perl on the web.

7 Hours

Lab: Lab Exercises: Use bc & dc to do simple to complicated calculators. Write a bc shell script. Write a sed script to edit files. Write awk shell programs to process files. Write and compile a C/C++ program.

6 Hours

Lab: Lab Exercises: Write a simple shell program with variables, loops, and selection. Use the X Window System to manipulate files and directories.

2 Hours

Final Exam.

METHODS OF INSTRUCTION:

Lecture, Computer Demonstration, Hands-on Exercises and Practices

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours 12

Assignment Description

Homework: Read Chapters 1, 2, Introduction to UNIX. Study and use UNIX commands. Study and use line editor.

Required Outside Hours 12

Assignment Description

Homework: Prepare for vi editor quiz. Read Chapter 3. Study and use vi editor.

Required Outside Hours 12

Assignment Description

Homework: Read Chapters 4, 7. Study and use e-mail, ftp, rlogin, and telnet. Study for quiz.

Required Outside Hours 12

Assignment Description

Homework: Read Chapters 5, 6. Study and use advanced file commands, and directories.

Required Outside Hours 16

Assignment Description

Homework: Read Chapter 8. Study for quiz. Study, master, and use advanced editing techniques.

Required Outside Hours 14

Assignment Description

Homework: Read Chapter on UNIX dot. Study for quiz on advanced editing. Complete required exercises.

Required Outside Hours 14

Assignment Description

Homework: Read Chapters 9, 10. Look over the bc section of the book, and use bc. Do some sed and awk scripts. Complete programming assignment.

Required Outside Hours 16

Assignment Description

Homework: Read Chapters 11,12. Master using variable, loops, and selection in shell scripts. Complete programming assignment. Study for final.

METHODS OF EVALUATION:
Writing assignments
Evaluation Percent 10
Evaluation Description
Writing assignments: 10% - 20%
Written Homework,
Lab Reports

Problem-solving assignments
Evaluation Percent 40
Evaluation Description
Problem-solving demonstrations: 40% - 60%
Homework Problems,
Quizzes,
Exams

Skill demonstrations
Evaluation Percent 30
Evaluation Description
Skill demonstrations: 20% - 50%
Class Performance,
Performance Exams

Objective examinations
Evaluation Percent 20
Evaluation Description
Objective examinations: 10% - 30%
Multiple Choice,
True/False,
Matching Items,
Completion

REPRESENTATIVE TEXTBOOKS:
A Practical Guide to Linux, or other appropriate college level text, Sobell, Mark, Addison-Wesley, 2018.
ISBN: 978-0134774602
12th Grade Verified by: MS Word

NDG NETLAB+ Supported Linux+ Series 1 and 2 documentation used for Labs

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
Transferable CSU, effective 200630
UC TRANSFER:
Transferable UC, effective 200630

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department:
CSU Crosswalk Course Number:
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: B
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000364147
Sports/Physical Education Course: N
Taxonomy of Program: 070800