

### Course Outline

**COURSE:** CSIS 48                      **DIVISION:** 50                      **ALSO LISTED AS:**

**TERM EFFECTIVE:** Fall 2016                      **CURRICULUM APPROVAL DATE:** 11/23/2015

**SHORT TITLE:** UNIX/LINUX OP. SYS

**LONG TITLE:** UNIX/Linux Operating System

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

#### **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
- 05 - Hybrid
- 72 - Dist. Ed Internet Delayed

## **STUDENT LEARNING OUTCOMES:**

1. Create documents using vi or emacs editor.

Measure: Homework, projects, lab exercises.

PLO: 1

ILO: 7

GE-LO:

Year assessed or anticipated year of assessment: 2016

2. Create UNIX files and use file utilities to manipulate the files.

Measure: Homework, projects, lab exercises.

PLO: 1, 2

ILO: 7

GE-LO:

Year assessed or anticipated year of assessment: 2016

3. Use sed, awk, and Perl to process UNIX files.

Measure: Homework, projects, lab exercises.

PLO: 2, 3

ILO: 7

GE-LO:

Year assessed or anticipated year of assessment: 2016

## **PROGRAM LEARNING OUTCOMES:**

1) Students will use UNIX editors to create and modify files.

2) Students will modify, move, and rename files and directories.

3) Students will use UNIX email and file transfer commands.

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

Curriculum Approval Date: 11/23/2015

1-2 6 Lec 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 Lab Lab Exercises/Reading:

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

Read Chapter 1, 2, Introduction to UNIX, study and use UNIX commands. Study and use line editor.

Performance Objectives:

The students log into UNIX, master UNIX commands, and print files. The students use the editor to

create files that instructor assigns. The students master the line editor.

3-4 6 Lec UNIX contributions: history, redirection, pipes and filters.

Quiz on the line editor.

Using the visual editor vi, vi commands, command syntax.

6 Lab Lab Exercises/Reading:

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. Prepare for vi editor quiz.

Read Chapter 3. Study and use vi editor.

Performance objectives:

The students demonstrate line editor proficiency with a quiz and document prepared in lab. The students use history to repeat commands or reuse arguments. The students use redirection and pipes to process command output. The students use the vi editor to create several documents.

5-6 6 Lec UNIX and the Internet: Using e-mail, file transferring, and remote logins. Quiz on UNIX commands, including history, redirection and pipes.

6 Lab Lab Exercises/Reading:

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.

Read chapters 4, 7. Study and use e-mail, ftp, rlogin, and telnet.

Performance objectives:

The students send e-mail to themselves and others in the class. The students master ftp, telnet, and rlogin commands to access other systems.

7-8 6 Lec Quiz on vi editor.

UNIX file commands.

Accessing files and directories.

UNIX file system: directory trees, hidden files, file types.

6 Lec Lab Exercises/Reading:

Do a hands-on test for e-mail.

Use UNIX commands to copy, move, link files and directories. Set up and use UNIX directories.

Read chapters 5, 6. Study and use advanced file commands, and directories.

Performance Objectives:

The students use UNIX file commands.

The students create and use UNIX directories.

9-10 6 Lec 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.

6 Lab Lab Exercises/Reading:

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.

Read chapter 8. Study, master, and use advanced editing techniques.

Performance Objectives:

The students use advanced editing techniques to modify files. The students write sed and awk programs.

11-12 6 Lec UNIX dot (secret files)

Filename wildcards.

Introduction to pattern matching.

Writing Perl programs.

6 Lab Lab Exercises/Reading:

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.

Performance objectives:

The students modify/create their dot files. The students use filename wildcards. The students write and compile a Perl program. Quiz on advanced editing.

13-14 6 Lec Using bc and dc calculators. Using sed to edit files.

Using awk to process files. Writing and compiling a C/C++ program.

6 Lab Lab Exercises/Reading:

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.

Read chapter 9, 10. Look over the bc section of the book, and use bc. Do some sed and awk scripts.

Performance objectives:

The students master bc calculator.

The students learn enough sed to edit files.

The students learn enough awk to process files.

The students write and compile a C/C++ program

using UNIX.

15-16 6 Lec 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.

6 Lab Lab Exercises/Reading:

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

Read chapters 11,12. Master using variable, loops, and selection in shell scripts.

Performance Objectives:

The students create shell programs with variables, loops, and selection statements.

17 Final Exam.

### **METHODS OF INSTRUCTION:**

Lecture, computer demonstration, hands-on exercises and practices.

### **METHODS OF EVALUATION:**

The types of writing assignments required:

Written homework

Lab reports

The problem-solving assignments required:

Homework problems

Quizzes

Exams

The types of skill demonstrations required:

Class performance

Performance exams

The types of objective examinations used in the course:

Multiple choice

True/false

Matching items

Completion

Other category:

None

The basis for assigning students grades in the course:

Writing assignments: 5% - 20%

Problem-solving demonstrations: 30% - 50%

Skill demonstrations: 10% - 50%

Objective examinations: 10% - 20%

### **REPRESENTATIVE TEXTBOOKS:**

Required:

Sobell, Mark. A Practical Guide to Linux. Prentice Hall, 2014. Or other appropriate college level text.  
Reading level of text, Grade: 12+      Verified by: ev  
Other textbooks or materials to be purchased by the student: none

**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: CSIS  
CSU Crosswalk Course Number: 48  
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