GROSSMONT COLLEGE

OFFICIAL COURSE OUTLINE

Curriculum Committee Approval: 04/20/2021

GCCCD Governing Board Approval: 05/18/2021

COMPUTER SCIENCE INFORMATION SYSTEMS 113 – INTRODUCTION TO LINUX

1. Course Number Course Title Semester Units

CSIS 113 Introduction to Linux 3

Semester Hours

3 hours lecture 48-54 total hours 96-108 outside-of-class hours 144-162 total hours

2. Course Prerequisites

None

Corequisite

None

Recommended Preparation

A “C” grade or higher or “Pass” in CSIS 110 and 112 or equivalent.

3. Catalog Description

This course provides a solid framework into the concepts, installation, and configuration of server Operating System (OS). Topics include understanding of the desktop environments used in the server environment. It describes ways of exploring and understanding of the OS. It demonstrates the system administration tasks and how they are used to provide support for multiple users. It describes issues related to security and shows how to automate tasks through shell scripting.

4. Course Objectives

The student will:

a. Configure a system to run Linux using command line tools.

b. Create and manipulate files using a text editor and Linuxcommands.

c. Use standard Linux utility programs such as sort, grep, awk, date, cal and others to perform work and complete assignments.

d. Print file contents and manage file system directories.

e. Manage and create multiple processes.

f. Demonstrate familiarity with the X-windows GUI environment.

g. Explain server security concepts, configuration and management, including authentication, access control lists, and log monitoring and management.

h. Shell scripting

5. Instructional Facilities

A classroom complete with terminal workstations running Linux and with Internet access.

6. Special Materials Required of Student

Removable storage media compatible with lab computers.

7. Course Content

a. Introduction to Linux Operating Systems

1) Resources managed

2) OS components

3) Types of OS and process execution

b. History of Linux

c. Linux command structure

d. Linux utilities, commands, and execution

e. Files and file creation, management and manipulation

f. The Linux file systems and directories

g. The Linux shell and shell commands

h. Processes and process control

i. Server directory services

j. Server security considerations and utilities

k. Shell Scripting

8. Method of Instruction

1. Online Computer-based reading and video assignments
2. Lecture and demonstration in a traditional classroom or via electronic means
3. Hands-on practice in either a dedicated or a virtual lab environment
4. Topical discussion of current operating systems trends and issues

9. Methods of Evaluating Student Performance

a. Hands-on computer exercises.

b. Projects and scenario-based lab activities: To include multiple hands-on Linux and UNIX activities applied from the textbook, such as chapter-by-chapter projects using standard Linux utility programs

c. Objective examinations and quizzes including a final examination

d. Practical application-based examinations and written quizzes that measure students’ ability to utilize and implement Linux operating system as well as analyzing a scenario and choosing the best among alternatives and options.

10. Outside Class Assignments

a. Preparation of shell scripts.

b. Entering files via the system editor.

c. Completion of projects.

d. Respond to other students’ analysis and comments on the class discussion board.

e. Read and analyze instructor assigned case studies; post analysis and comments to the class discussion board.

f. Complete and pass section quizzes and course final exam.

11. Representative Texts

a. Representative Text(s):

Eckert, Jason, *MindTap Linux+ and LPIC -1 Guide to Linux Certification* 5th ed., Course Technology, Boston, MA ISBN-13: 978-1-337-56979-8 (2020)

b. Supplementary texts and workbooks:

None

Addendum: Student Learning Outcomes

Upon completion of this course, our students will be able to do the following:

* 1. Demonstrate an understanding of the standard Linux file system structure and the meaning and types of Linux files by creating directories and creating, moving and copying different types of files between different directories and be able to find files and file contents and to organize (sort) those files based on different criteria.
  2. Describe the various methods of providing security for files stored in the Linux file system, to include permission for various types of users to access the files with different levels of usage and availability.