**COURSE SYLLABUS**

**COM259: LINUX Fundamentals**

**Course Description**

History, concepts, and facilities of the LINUX operating system will be discussed. The course introduces the user interface, common commands, and basic system administration of a LINUX operating system. Students will learn how to write and execute LINUX shell scripts used for the controlled execution of a series of basic LINUX commands. The basics of script writing – creation, writing in the shell programming language, debugging, and execution – will be covered, along with an overview of built-in shell commands available to the user. Advanced topics will include use of user/shell/environmental variables, script commands for decision-making, looping and flow-control, and creation of shell aliases and functions.

General Course Information

|  |  |
| --- | --- |
| Number of Units/Weeks | 8/10 |
| #Hours Lecture/#Hours Laboratory/#Hours Homework | 60/40/120 |
| Prerequisite(s) | None |
| Co-requisites (s) | None |
| Course Developer(s) | Ed Nowak / Bill Reid |
| Date Approved / Last Review | September 2005 / March 2018 |

**Learning Outcomes**

Upon completion of the course, student will be able to:

* Log on to clients and servers using network operating systems.
* Navigate a hierarchical storage system.
* Create, manipulate and edit files and directories.
* Obtain system information including active users and active processes.
* Write and debug scripts, simple programs
* Use programming constructs including variables, selection and repletion control structures.

**Instructional Methods Employed in this Course**

A number of instructional/learning methods are employed in this course, including the following:

* Lecture and reading assignments.
* Hands-on exercises.
* Team environment.
* Practical application of theory and skills in authentic design projects.
* Build on prior knowledge and experience of students to enhance richness of class activities.

**Information Resources for this Course**

**Textbook**

Sobell, M. (2013). *A practical guide to Linux commands, editors, and shell programming*

(3rd ed.). Upper Saddle River, NJ: Prentice Hall.

**Table/Topics & Assignments**

**Types of Assignments:**

**Lecture -**

Considered Lecture Hours  
**Classroom Discussion -**

Considered Lecture Hours  
**In Class Critique -**

Considered Lecture Hours  
**Delivering Oral Presentations -**

Considered Lecture Hours  
**In Class (IC) Exercise -**

Considered Lecture Hours  
**Reading -**

Considered Homework (HW), work done outside of class  
**WebClass lesson (non-online courses) -**

Considered HW, work done outside of class

**Lab Work -**

Considered Lab Hours  
**Quiz, Midterm or Final -**

Considered Lecture Hours

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week 1 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 1A | LINUX Overview, Login, Using Directories and Files Shells and Editors | 6 | 0 | 0 | 0 |  |
| LAB 1A | LINUX Overview, Login, Using Directories and Files Shells and Editors | 0 | 4 | 0 | 0 | End of week 1 |
| HW 1A | Reading chapters 1&2 (47 pages) Evaluated by HW 1B - Assessment – Quiz week 3 | 0 | 0 | 4.7 | 0 |  |
| Total Week 1 |  | 6 | 4 | 4.7 | 0 |  |
| Week 2 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 2A | File Systems, Permissions and File Manipulation | 6 | 0 | 0 | 0 |  |
| HW 2A | Reading chapters 3&4 (75 pages) Evaluated by HW 2B - Assessment – Quiz week 3 | 0 | 0 | 7.5 | 0 |  |
| LAB 2A | File Systems, Permissions and File Manipulation | 0 | 4 | 0 | 0 |  |
| Total Week 2 |  | 6 | 4 | 7.5 | 0 |  |
| Week 3 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 3A | System Information and Your Environment | 6 | 0 | 0 | 0 |  |
| LAB 3A | System Information and Your Environment | 0 | 4 | 0 | 0 |  |
| HW 3A | Reading chapters 5&6 (86 pages) Evaluated by HW 3C - Assessment – Quiz week 4 | 0 | 0 | 8.6 | 0 |  |
| HW 3B | Project 1 | 0 | 0 | 10 | 200 | Beginning of week 5 |
| EXAM 1A | Quiz 1 | 0 | 0 | 0 | 50 |  |
| Total Week 3 |  | 6 | 4 | 18.6 | 250 |  |
| Week 4 | | | | | | |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LECA 4 | System Administration Basics | 5.5 | 0 | 0 | 0 |  |
| EXAM 4A | Quiz 2 | 0.5 | 0 | 0 | 50 |  |
| HW 4A | Reading chapter 8 (90 Pages) Evaluated by HW 4C - Assessment – Mid-Term Exam | 0 | 0 | 9 | 0 |  |
| LAB 4A | System Administration Basics | 0 | 4 | 0 | 0 |  |
| Total Week 4 |  | 6 | 4 | 9 | 50 |  |
| Week 5 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC**  **Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 5A | Course Review and Discussions | 5 | 0 | 0 | 0 |  |
| LAB 5A | Writing and Running Scripts | 0 | 4 | 0 | 0 | End of week 5 |
| HW 5A | Mid Term Review 1-6, & 8 (310 pages) | 0 | 0 | 15.5 | 0 |  |
| EXAM 5A | Midterm | 1 | 0 | 0 | 200 |  |
| Total Week 5 |  | 6 | 4 | 15.5 | 200 |  |
| Week 6 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 6A | Program Design and Pseudo-code/Developing an Algorithm | 6 | 0 | 0 | 0 |  |
| HW 6A | Reading chapter 10 (40 pages) Evaluated by HW 6C – Assessment – Quiz week 8 | 0 | 0 | 4 | 0 |  |
| LAB 6A | Program Design and Pseudo-code/Developing an Algorithm | 0 | 4 | 0 | 0 |  |
| Total Week 6 |  | 6 | 4 | 4 | 100 |  |
| Week 7 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 7A | Selection Control/Repetition Control structures | 6 | 0 | 0 | 0 |  |
| LAB7A | Selection Control/Repetition Control structures | 0 | 4 | 0 | 0 |  |
| HW 6A | Reading chapter 10 (40 pages) Evaluated by HW 6C – Assessment – Quiz week 8 | 0 | 0 | 4 | 0 |  |
| HW 7B | Project 2 | 0 | 0 | 20 | 200 | End of week 9 |
| Total Week 7 |  | 6 | 4 | 24 | 50 |  |
| Week 8 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 8A | Remote Synchronization | 1 | 0 | 0 | 0 |  |
| EXAM 8A | Quiz 3 | 1 | 0 | 0 | 50 |  |
| LAB 8A | Repetition Control/ Combining Structures | 0 | 4 | 0 | 0 |  |
| LEC 8B | OpenSSH | 4 | 0 | 0 | 0 |  |
| HW 8A | Reading chapter 16 & 17 (36 pages) Linux – Assessment – Quiz 4 | 0 | 0 | 3.6 | 0 |  |
| Total Week 8 |  | 6 | 4 | 3.6 | 50 |  |
| Week 9 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **HW Time** | **Point Value** | **Due** |
| LEC 9A | Introduction to Python | 3 | 0 | 0 | 0 |  |
| LAB 9A | Script Debugging | 0 | 6 | 0 | 0 | End of week 9 |
| HW 9A | Reading chapter 12 (27 pages) –Assessment – Final Exam | 0 | 0 | 2.7 | 0 |  |
| Exam 9A | Quiz 4 | 1 |  |  | 50 |  |
| Total Week 9 |  | 4 | 6 | 2.7 | 50 |  |
| Week 10 |  |  |  |  |  |  |
| **Type** | **Topic/Description** | **LEC Time** | **LAB Time** | **ELP Time** | **Point Value** | **Due** |
| LEC 10A | Review Chapters 10, 14, 16 & 17 | 5 | 0 | 0 | 0 |  |
| LAB 10A | Project 2 | 0 | 4 | 0 | 0 |  |
| HW 10A | Final Review Chapters 1-6, 8, 10, & 14, 16 & 17 (468 pages) | 0 | 0 | 23.4 | 0 |  |
| EXAM 10A | Final Exam | 1 | 0 | 7 | 200 | End of week 10 |
| Total Week 10 |  | 6 | 4 | 30.4 | 200 |  |

**Course Hours Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Topic** | **LEC Time** | **LAB Time** | **HW Time** |
| 1 | LINUX Overview, Login, Using Directories and Files Shells and Editors | 6 | 4 | 4.7 |
| 2 | File Systems, Permissions and File Manipulation | 6 | 4 | 7.5 |
| 3 | System Information and Your Environment | 6 | 4 | 18.6 |
| 4 | System Administration Basics | 6 | 4 | 9 |
| 5 | Discussions /Script writing / Midterm | 6 | 4 | 15.5 |
| 6 | Program Design and Pseudo-code/Developing an Algorithm | 6 | 4 | 4 |
| 7 | Selection Control/Repetition Control structures | 6 | 4 | 24 |
| 8 | Repetition Control/ Combining Structures | 6 | 4 | 3.6 |
| 9 | Selection with Case Structures / Repetition Structure | 6 | 4 | 2.7 |
| 10 | Course review & Discussions / Testing & debugging project 8 / Final | 6 | 4 | 30.4 |
| Total |  | 60 | 40 | 120 |

**Table/Point Breakdown**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Assignment** | **Possible Points** | **Percent**  **of Grade** |
| 3 | Quiz 1 | 50 | 10% |
| 4 | Quiz 2 & Project 1 | 250 | 25% |
| 5 | Midterm | 200 | 20% |
| 8 | Quiz 3 | 50 | 10% |
| 9 | Quiz 4 & Project 2 | 250 | 25% |
| 10 | Final | 200 | 20% |
| Total |  | 1000 | 100% |

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Your Grades for this Course** | | |  |  |  |  |
| Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity. | | | | | | |
| Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows: | | | | | | |
| **Coleman University Grade Assignment Policy:** | | | |  |  |  |
|  | **Percent** | | **Letter Grade** | **Grade Points** |  |  |
|  | 94-100 | | A | 4 |  |  |
|  | 90-93 | | A- | 3.67 |  |  |
|  | 87-89 | | B+ | 3.33 |  |  |
|  | 84-86 | | B | 3 |  |  |
|  | 80-83 | | B- | 2.67 |  |  |
|  | 77-79 | | C+ | 2.33 |  |  |
|  | 74-76 | | C | 2 |  |  |
|  | 70-73 | | C- | 1.67 |  |  |
|  | 67-69 | | D+ | 1.33 |  |  |
|  | 64-66 | | D | 1 |  |  |
|  | 60-63 | | D- | 0.67 |  |  |
|  | N/A | | INC | 0 |  |  |
|  | N/A | | W | 0 |  |  |
|  | N/A | | CR | 0 |  |  |
|  | 59 or below | | F | 0 |  |  |
|  | N/A | | I | 0 |  |  |
|  | N/A | | W | 0 |  |  |
|  | N/A | | AU | 0 |  |  |
|  | N/A | | TR | 0 |  |  |
|  | N/A | | WV | 0 |  |  |
|  |  |  |  |  |  |  |
|  | **Legend** | | |  |  |  |
|  | CR = Credit | NC = No Credit | |  |  |  |
|  | I = Incomplete | W = Course Withdrawal | |  |  |  |
|  | AU = Audit | TR = Transfer Credit | |  |  |  |
|  | WV = Waiver |  | |  |  |  |
|  |  |  |  |  |  |  |
| **Academic Accommodation / Adjustment Policy:** | | | | | | |
| In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals. | | | | | | |
| To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations. | | | | | | |
|  |  |  |  |  |  |  |
| After the academic accommodations have been determined, the students’ instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures. | | | | | | |