Pellissippi State Community College
Master Syllabus

Linux System Administration
CSIT 2411

Class Hours: 3.0
Laboratory Hours: 3.0
Credit Hours: 4.0
Revised: Spring 2010

Instructor:
Office No.:
Phone No:
E-Mail:

Catalog Course Description:

A study of system administration tools and techniques for the Linux operating system. Emphasis will be on the practical use and application of the Linux operating system to perform system installation, configuration and maintenance tasks.

Entry Level Standards:

The student must have familiarity with basic Linux/Unix system administration concepts such as file systems, processes, vi editor, string processing, standard I/O, desktop environments, and general purpose command line utilities. The student must have college level reading and math skills and keyboarding skills of at least 28 wpm.

Prerequisites: CSIT 2410 or Linux/UNIX system administrator or user level experience.

Textbooks and Other Related Material Basic to the Course:

Linux Administration Handbook by Nemeth, Snyder and Hein, Prentice Hall, ISBN: 978-0131480049.

I. WEEK/CHAPTER/TOPIC BASIS:

Week	Chapter	Lecture Topic
1	1	Introduction and course overview
2	1,2,23	Linux system installation
3	2	System initialization and services
4	12, 19	Network configuration
5	2, 28	Kernel configuration and customization
6	5	File system management & maintenance
7	6, 17	User administration – NIS, LDAP
8	9, 11	Package management and backup
9	-	Review and **Midterm**
10	-	Kickstart configuration & installation
11	7, 16	Disks quota and swap space administration
12	22	Graphical User Interface (GUI) configuration
13	7	Software RAID and LVM configuration
14	8, 10	Automation & scheduling of tasks, **Hands-on exam**
15	-	**Comprehensive final exam**

II. COURSE OBJECTIVES:

A. Perform and document basic and advance system installation. II, III, IV, VII, VIII, IX, X, XII
B. Understand Linux system initialization process. II, III, IV, VII, XI
C. Perform network and kernel configuration. I, III, IV, V, VII, IX, XI, XII
D. Setup and Use system GUI environments. II, III, IV, VIII, IX
E. Administer systems and use good administration techniques, logic, utilities and procedures. III, IV, VI, VIII, IX, XI
F. Perform system backup, maintenance & management tasks. II, III, IV, VIII, IX

III. INSTRUCTIONAL PROCESSES:

Students will:

1. Use system administration tools to configure and manage applications and system resources. *Technological Literacy Outcome, Transitional Strategies, Active Learning Strategies*
2. Install Linux operating system based on client input and specifications. *Communication Outcome, Mathematics Outcome, Technological Literacy Outcome, Transitional Strategies, Active Learning Strategies*
3. Plan and install Linux/Unix systems based on client input and specifications. *Communication Outcome, Mathematics Outcome, Technological Literacy Outcome, Transitional Strategies, Active Learning Strategies*
4. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Communication Outcome, Active Learning Strategies*
5. Use industry accepted practices to administer systems and environments in a stand-alone or clustered environment. *Communication Outcome, Mathematics Outcome, Technological Literacy Outcome, Transitional Strategies, Active Learning Strategies* .
6. Use professionally accepted methods and materials in their approach to system administration. *Technological Literacy Outcome, Transitional Strategies, Active Learning Strategies*

IV. EXPECTATIONS FOR STUDENT PERFORMANCE:

The student should be able to

1. Customize and configure kernel to meet application needs. A, B, C, E, F
2. Configure network interfaces, DNS clients and network parameters. B, C, E
3. Produce documents and working utilities using Unix/Linux tools. A, E, F
4. Apply knowledge and concepts to specific problems. A ,B, C, D
5. Be able to perform and administer system setup, procedures and file management activities. A, B, E, F
6. Be able to perform advance user administration using NIS and LDAP. E, F
7. Be familiar with the development of the Unix/Linux system. A ,E, F
8. Configure and customize desktop environments and GUI tools and utilities. A, D, E, F
9. Perform package management, system backup and automation tasks. E, F
10. Understand and use RAID and LVM configuration and management techniques. B, E, F

V. EVALUATION:

A. Testing Procedures:
One hands-on and two theoretical tests will be given during the course of the semester. A passing grade is required on the hands-on exam to pass the course. There will be no make-up tests unless prior arrangements have been made with the instructor. Failure to make a passing test average may result in a grade of F for the course.

B. Laboratory and Project Expectations:
At least 6-8 lab assignments will be given during the course of the semester. In addition, students may be assigned a team project. A late penalty will be imposed on any overdue assignment. Failure to make a passing average in lab assignments and team project may result in a grade of F for the course.

C. Field Work: N/A

D. Other Evaluation Methods:
You are expected to do your own work in this class. If you are unable to complete an assignment on your own, it is your responsibility to get help from the instructor (before the assignment is due). Plagiarism, cheating, software piracy, non-educational use of computer systems and other forms of academic dishonesty are strictly prohibited. A student caught cheating or infracting specific rules will be given a grade of "F" for the course and a letter from the department head will be placed in the student's academic record file, or dismissal from the college will be recommended.
In the event that you have an emergency beyond your control, you must notify the instructor in advance, if at all possible.

E. Grading Scale:

93 – 100	A
88 – 92	B+
83 – 87	B
78 – 82	C+
73 – 77	C
65 – 72	D
Below 65	F

VI. POLICIES:

A. Attendance Policy:

Pellissippi State Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. [NOTE: No differentiation is noted for excused/unexcused absences. These will be treated as an absence.] (Pellissippi State, 2008-2010 Catalog, http://pstcc15.pstcc.edu/catalog, page 83)

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course. (Pellissippi State, 2008-2010 Catalog, http://pstcc15.pstcc.edu/catalog, pages 61-62)

C. Computer Usage Guidelines:

College-owned or –operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State's computing resources in an effective, efficient, ethical and lawful manner. (Pellissippi State, 2008-2010 Catalog, http://pstcc15.pstcc.edu/catalog, pages 66-69)

D. Students with Disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 134 or 126 or by phone: 694-6751(Voice/TTY) or 539-7153. More information is available at www.pstcc.edu/departments/swd/