CIST 1341 TOPICS in CIS&T:
LINUX OPERATING SYSTEM
Fall 2016

Lecture hours and locations: T R 1:00 PM - 2:15 PM HANGR00124
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Office Hours: 3:30PM – 5:00PM Tuesday/Thursday, and by appointment.
Prerequisites: Upper level standing

Course Description:
Linux is widely used in academia and embedded systems nowadays, and many popular operating systems are derived from Linux. In this course students will learn basics of Linux operating system, including introduction to the installation, configuration, troubleshooting and use of this popular Open Source software. Basic commands, utilities, system structures, shell scripting and tools are explored.
Key topics include:
- Installation of Linux systems
- Linux Commands
- File Operations
- Text Processing
- Shell script and system programming

Course Objectives:

After taking this course, students will understand structures of Linux system, and be comfortable using basic Linux commands and desktop interface, managing files, and using Linux and its tools in daily life. They will be able to use Linux for text processing and publication, data process and analysis, and have basic skills of programming in shell script and C using system calls.

Textbooks:
There are plenty of free books or tutorial documents for learning Linux. No textbook is required.

Grading and Evaluation Criteria

Grading will be based on:

In-class quizzes	10%
Homework Assignments	30%
Examination	60%

% of points earned	Grade
97-100	A+
93-96	A
90-92	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+
74-76	C
70-73	C-
67-69	D+
64-67	D
Below 64	F

Tentative Course Outline

Week	Topics	Notes
1	Introduction to Linux and installation; Basic commands and desktop operations.	
2	Linux file systems and disk usage I – file system structure, creating partitions & volumes, mounting volumes.	
3	Linux file systems and disk usage II – system directories, directory & file operations, file attributes, symbolic links & hard links	
4	Filters, piping and file redirection --- concepts and tools	
5	Process & memory management: concepts of processes and threads, monitoring and managing processes & memory.	
6	Network configuration and applications: configure networking settings and connect to Internet; Tools to diagnose and test networking, and to communicate: ipconfig, ping, traceroute, route, netstat, netcat, telnet, ssh etc.	
7	System Administration: backing-up & restoring system, disk management, account and permission management, upgrading system, scheduling, securing system etc.	
8	Wildcard and regular expressions	
9	Text processing and preparing documents	
10	Introduction to command shells	
11	Basic shell programming - I	
12	Basic shell programming - II	
13	Basic C programming and system calls - I	
14	Basic C programming and system calls - II	
15	Exam	

There will be 4 assignments on system configuration, software installation, and programming.

Ethics Note

The tools and techniques you learn in this class should be used with care and prudence. What you learn in this class is to be used in an ethical manner. The tools and techniques should NEVER be used to break the law. You are responsible for your own behavior!

CourseWeb

Supplementary information for the course is available on the class courseweb site. The Web site contains class notes, PowerPoint slides, class announcements, the course syllabus, and other information for the course.

E-Mail

All students should be checking their Pitt e-mail account on a regular basis. If you have any questions about the course or need assistance, please contact me in person or by telephone during office hours; or by e-mail at any time.

Attendance

Absence from this class is a serious matter and should be discussed with me in advance. Excessive absences will be reason enough to drop your grade one FULL letter.
Arriving late to class repeatedly is a sign of disrespect, both to me and to your classmates. It is expected that students show respect for the class by turning off cell phones, by not packing up personal belongings until after I have indicated that the class is over, and by acting with civility.

Student Opinion of Teaching Surveys

Students in this class will be asked to complete a *Student Opinion of Teaching Survey*. Surveys will be sent via Pitt email and appear on your CourseWeb landing page during the last three weeks of class meeting days. Your responses are anonymous. Please take time to thoughtfully respond, your feedback is important to me. Read more about *Student Opinion of Teaching Surveys*.

University Policies:

Academic Integrity

Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

Disability Services

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Academic Success Center's Disability Resources and Services Office (218 Hanley Library, 814-362-7609) as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

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Statement on Classroom Recording

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.