

IT 244 Introduction to Linux/Unix (exists as CSIT 244)

Course Description:

A course designed to introduce students to Linux and UNIX. Students will install, set up, and operate standard tools and learn how they operate together. By course end students will have installed a fully functional Internet server while understanding its structure. Security issues of operating systems will be studied throughout the course.

Objectives: Students will be able to use the common utility programs found on Unix/Linux systems, to configure a Linux server, and to serve as the system administrator of a Unix/Linux system. These students will be familiar with the Unix terminology, systems architecture, and how an operating system is made up of many pieces operating concurrently and without conflict. Learning about Internet basics, the student will understand file and servers, security issues, and backup/security.

Textbooks:

Ellen Siever, *Linux in a Nutshell (5th or latest Edition)*, O'Reilly & Associates, 2005,

Christopher Negus, *Fedora 7 and Red Hat Enterprise Linux Bible (Paperback)*. Wiley, 2007.

Additional Reference(s): Redhat Linux 7 software and The Linux HOWTOs available from Linux on Line <www.linux.org>

Projects, Assignments and Examinations: There will be a mid-term and a final, along with bi-weekly projects. The exams will count for 50% of the class grade with the other 50% coming from the projects.

Projects

This course is best described by the kind of projects that students do. Indeed, outcomes might be described as the projects that the students have successfully completed.

- Installing a Fedora (or another) Linux server on your PC.
- Installing Linux on a dual-boot PC (permitting the booting of either Linux or Windows).
- Configuring your Linux server to connect to the Internet.
- Installing and using the vi and Emacs editors
- Installing and using various system services, eg an open-source database.
- Installing and configuring a WWW server, eg Apache and Tomcat.
- Setting up a WWW site.
- Installing and configuring a firewall.

Weekly Class Schedule

Week 1: Linux Basics

- Terminology
- Basic Components
- History and Future
- The User Interface
- Our Tools

Week 2: Installation and Setup

- Preparing your Computer

- Installing the Operating System
- Initializing the Services
- Setup and Logon
- Week 3: Operating System Basics
 - System Architecture
 - Setup and Configuration
 - Processes and Programs
 - Background Services
 - Automating Common Tasks
 - Starting and Stopping Services
- Week 4: Internet Basics
 - Services and Protocols
 - Networks and Systems
 - The Programs behind it all
 - Setup and Configuration
 - Getting Hooked Up
- Week 5: Admin Basics
 - The Waterfront
 - Planning and Implementing
 - What has to be done
 - Periodic Tasks
 - Aperiodic Tasks
 - Emergency Situations
- Week 6: Our First Service: FTP
 - How it works
 - Where to get it
 - How to Install it
 - Customization and Configuration
- Week 7: File System Servers
 - What they are
 - How they work
 - How to Install them
 - Customization and Configuration
- Week 8: World Wide Web Servers
 - What they are
 - How they work
 - How to Install them
 - Customization and Configuration
- Week 9: Relational Databases
 - What they are
 - How they work
 - How to Install them
 - Customization and Configuration
- Week 10: Firewalls
 - Security Overview
 - What they are
 - How they work
 - How to Install them
 - Customization and Configuration
- Week 11: Mail Services
 - What they are
 - How they work

How to Install them
Customization and Configuration

Week 12: Backup and Restoration

Process Overview

The Tools

The Tasks

The Problems

The Solutions

Week 13: Review & Final

Student Conduct

All students are expected to follow the [University's Code of Student Conduct](#). If you are caught cheating, we will follow the guidelines for punishment outlined in the code.

When you turn in work that you have discussed with someone, or which contains ideas that you found in a book, *you must indicate that fact*. We expect you to talk to each other and to read materials other than those assigned. We also expect to see in your work evidence that you have done so. Learning to acknowledge intellectual debts is part of learning. You should be reading, talking to each other, and telling the world that you have done so. When group work is called for the group solution should note whenever a part of the project was done by only a part of the group.

Some kinds of sharing, however, are unacceptable. You may not use the computer to copy someone's work and submit it as your own -- even if you acknowledge that theft! You may not have your friends do your work for you. Versions of some of the assignments in this course may have been given in previous years. You may not use answers to those assignments.

Accommodations

Section 504 of the Americans with Disabilities Act of 1990 offers guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center for Disability Services, Campus Center 2nd Floor, 2100 Street, Room 2010, 617-287-7430. The student must present these recommendations and discuss them with each professor within a reasonable period, preferably by the end of Drop/Add period.