Course Information - Unix System Administration

This document details the logistics of this course, including an abbreviated course schedule. For information on the grading, attendance, computer accounts, etc, see the *Policy Statement*. For information on assignments, see *Assignment Guidelines* and *Shell Script Assignments* The *Course Schedule* details topics by week.

HOW THIS COURSE WORKS

First, welcome to System Administration. This is an excellent course. I have had many former students tell me that this is the course that got them started in the field. During it you will learn a lot more about Unix and you will be able to decide if System Administration is right for you.

This course contains a huge amount of information - even more, now that it prepares you for the first RedHat exam. It is impossible to cover the information completely in lecture. To save class time and to limit student stress taking notes, the details of the lectures have been placed in *lecture notes* online. Class time is reserved for a summary lecture/demonstration, followed by an introduction to the current set of exercises on the topic and a lab session for individual or group work. In detail, here is how each week works:

- *prior to attending class*, you must read the lecture notes for the week. You must also take a quiz online. This short multiple-choice quiz is designed to be fairly easy if you have read the material, and nearly impossible if you haven't. It must be completed before the start of the lecture. **I highly suggest you complete the reading and the quiz the weekend before the next class meeting - then post to the Google group and look over the exercises before the class meeting.**

- come to the week's summary lecture/demonstration. At the end of the lecture we will go over the week's exercises followed about once a month by an in-class midterm. We will then break for a lab session, which you must start in class. The periodic in-class midterms as well as the final exam are drawn largely from the exercises.

   The weekly lab sessions are part of the class and attendance is required. During each lab session I will check attendance sometime after 9:30pm. Those who are present and working on the exercises or assignments will earn three points of credit. Missed lab sessions cannot be made up.

- between classes, complete the exercises and review the reading material. Then read the lecture notes for the next week. You must also work on the monthly shell-scripting assignments.

- use the class *Google group* to discuss class topics. Regular posting and responding to the Google group earns some extra-credit participation points at the end of the semester up to 5% of the max points available in the rest of the course.

> *It is imperative that you keep up with the material in this course. If they are done as assigned, the exercise sets, lecture notes, and assignments are manageable. If you procrastinate, it will be very difficult to catch up before the next midterm.*

At all times I am here to help you. Do not hesitate to ask any question individually, in class, or on the forums. With the exception of posting significant parts of the solutions to shell scripting assignments, any interaction on class topics is welcome. In particular, if you are falling behind, see me immediately.

COURSE MATERIALS

The most up-to-date schedule for this course is accessible from the *Course Syllabus.* A general guideline is in the course shell on our online system at *https://ccsf.instructure.com/* Accessible versions of documents are available on request.

Because the online notes have become so exhaustive, the course text, which is the best book on System Administration that is current, by Nemeth, is recommended rather than required. Reading assignments are listed in the complete schedule in the online system for those who want to supplement the lecture notes.

The exercise sets, which are also available using the online system (or the schedule below) must be done on one of our linux systems. (Some may also use our hills system, which is now also RedHat linux.) If you have your own linux system at home and want to replicate the exercises there, you are on your own. Our linux systems and your virtual machines currently use Scientific Linux, which is a free redistribution of RedHat Enterprise Linux. If you want a real subscription to RedHat Linux, search for Academic Pricing on their website.

Remember, read the lecture notes and take the online quiz *before* the class meeting

ACCOUNTS

Besides your *hills* and linux accounts, you will have several accounts for the purposes of this class:

- the **root** account to our linux systems. The same root account is used on all of our linux systems, but the root account is a local account, not a network account.
- a generic account on our linux systems. This account is needed from time to time in the exercises. Please do not log into the generic account unless you are instructed to do so. This semester there are two generic accounts - you should use the generic account that is specifically for our class, the cs260a account.
- The **root** account and a generic account on your VM
- A limited privilege account on the VM used as a basic server - **bs** for short. The **bs** VM should be running at all times. It is used by all the classes that use VMs.

Passwords to these accounts will be given out in-class.

STUDENT LEARNING OUTCOMES

On completion of this course, you will be able to

A. Configure basic networking, and install and configure default NFS, http and anonymous ftp servers.
B. Analyze and control basic system security by use of specialized permissions, restricting access to privileges and the configuration and monitoring of system log information.
C. Add, remove, configure and monitor services controlled by systemd and demonstrate the parallel configuration using legacy init.
D. Design and implement filesystem divisions using hard partitions and logical volumes and demonstrate the archiving and restoration of data to them.
E. Create, modify, and configure user accounts and configure remote access using key-based authentication.

(Actually, you will be able to do a lot more than this, but I am required to post the course SLOs and to give them to you.) My intention is to cover the great majority of the topics for the RHCSA exam as listed on *Redhat's Website*