



## Course Syllabus for CS 279 Introduction to Linux Fall 2014

### Basic Course Information:

<b>Instructor:</b>	Alex Hampel		
<b>Lecture times and location:</b>	Monday, Wednesday	5:00 - 6:20 pm	BSS 408
<b>Lab time and location:</b>	Tuesday	5:00 - 6:50 pm	BSS 313
<b>Instructor's office:</b>	VMH 214		
<b>Instructor's e-mail:</b>	ah270@humboldt.edu or alex.hampel@humboldt.edu or alexander.hampel@humboldt.edu		
<b>Instructor's office phone:</b>	(707) 826-6123		
<b>Instructor's office hours:</b>	By appointment		

**Course public web page:** follow link from:  
<http://users.humboldt.edu/ahampel/>  
or follow link from course Moodle site

### Course Description:

[from the HSU catalog:] Introduces the UNIX/Linux family of operating systems. Basic commands, utilities, system structures, scripting and tools are explored. Elements of system administration are presented.

This course is primarily oriented for would-be **users** of UNIX -- in the words of the course text, p. iv, for those "primarily interested in it as a tool". It is not a course in UNIX system programming (it is not a course in UNIX internals), nor is it a course in UNIX system administration, although I hope we will brush up against a few aspects of UNIX system administration during the course of the semester.

This general overview of the UNIX and Linux operating systems will include topics such as the UNIX user

environment, commands, file system, processes, and utilities, as well as UNIX history and philosophy. Specific emphasis will be given to the `bash` shell and user environment.

## Course Objectives:

After successfully completing this course, students should be able to<sup>\*</sup>:

- comfortably use basic UNIX/Linux commands from the command line (from a terminal window);
- organize and manage their files within the UNIX/Linux file system;
- organize and manage their processes within UNIX/Linux;
- usefully combine UNIX/Linux tools using features such as filters, pipes, redirection, and regular expressions;
- customize their UNIX/Linux working environment;
- be knowledgeable enough about basic UNIX/Linux shell scripting to be able to successfully read and write `bash` shell scripts;
- know how to use UNIX/Linux resources to find additional information about UNIX/Linux commands.

## Course Prerequisites:

Successful completion of an introductory computer programming course should be sufficient prerequisite for CS 279. Its official prerequisite is **CS 111**- Computer Science Foundations 1, our current introductory programming course, but I will be happy to provide you with a permission number for CS 279 if you have taken any introductory computer programming course.

## Required Course Text, Materials, etc.:

- "UNIX for the Impatient", 2nd Edition, Paul Abrahams, Bruce Larson, Addison-Wesley, 1997, ISBN-13# 978-0-201-82376-9
- Additional required readings may be made available either on-line, or via resources available through the HSU Library such as the ACM Digital Library and Safari TechBooks Online.

## Course Software:

We will be making use of several "flavors" of UNIX/Linux this semester. We will be using a version of Red Hat Linux via Secure Shell (`ssh`) on the HSU campus computers `nrs-labs.humboldt.edu` and `nrs-projects.humboldt.edu`, and a desktop version of SUSE Linux on the computers in BSS 313.

We will primarily be using the `bash` UNIX shell this semester. (Note that the `bash` shell seems to be the default for `nrs-labs`, `nrs-projects`, and Mac OS X's Terminal application.)

As noted above, you will need to use Secure Shell (`ssh`) this semester; you will also be making use of Secure ftp (`sftp`). One of several versions of `ssh` may be downloaded for free from:

<http://www.humboldt.edu/its/software>

(A nice introductory tutorial, including screenshots, for the graphical Windows version of `ssh` and `sftp` can be found at:

<http://oit.colorado.edu/node/1657>

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<sup>\*</sup> Some of these are adapted from the ACM Computer Science Curriculum 2001, available from link at: <http://www.acm.org/education/curricula-recommendations>

## Instant Response Technologies (e.g. Clickers):

We WON'T be using Turning Technologies student response clickers in class, but instead use a Socrative class room during Labs on Tuesdays via a Web browser.

The Web based Socrative class room (<http://m.socrative.com>) response system will record the overall class response percentages as well as keep track of individual answers. Typically, you will receive **1.5 points** for a correct answer, **0.75 points** for an incorrect answer, and **0 points** for no answer, but with a maximum semester questions grade of **120**. (There may be some no-point questions from time-to-time as well -- such questions will be noted if/when they come up.) Thus you will be rewarded for regular attendance and participation. If you miss a lab session, you miss that day's questions and cannot make them up. However, there will be a sufficient number of questions asked to allow for the possibility of extra credit (up to a **maximum** grade of **120**) (or to make up for a day that you are out due to illness, although note that you are still responsible for finding out what you missed on such days).

The idea is that the Socrative classroom questions will help you to see if you are starting to understand concepts being discussed; sometimes they will also provide review of concepts discussed previously. Classroom questions are typically quite different from exam questions (since classroom questions are typically multiple-choice questions, while exam questions will rarely be multiple-choice). They still enable you to get some immediate feedback regarding whether you are grasping course concepts, whether you need to pay more attention to course discussions and/or readings, etc. They may even help me to know what concepts might need more explanation in-class.

I hope to run tests of the system during the first three lab meetings, and hope to begin asking questions that "count" during the second week's Tuesday lab.

Finally, please note that use of another CS 279 student's classroom identity, or having someone else use your ID in a CS 279 class session -- that is, pretending that someone is in class who actually is not -- is considered to be cheating, with the same policies applying as would be the case if you turned in someone else's work as your own or permitted someone else to copy your work. Please ASK ME if you are not sure what I mean by this.

## Grading Breakdown:

If you are a Computer Science (CS) major, it is important that you note that you must earn **at least a C in CS 279** for this course to count as a CS major elective.

Your semester grade will be determined by the percentage of points that you earn, **subject to some minimum requirements**. Here are the grade percentages, followed by those minimum requirements:

<b>Homework assignments:</b>	25.0%
<b>Lab exercises:</b>	12.5%
<b>Classroom questions:</b>	12.5%

<b>Exams:</b>	<b>Exam 1:</b>	15.0%	
	<b>Exam 2:</b>	15.0%	
	<b>Final Exam:</b>	20.0%	Monday, December 15, 3:00 - 4:50 pm, BSS 408

### Grade Requirements:

- To earn a grade of **C or better** in this course, the following three requirements must **all** be met:
  - your overall semester average must **equal or exceed 72.5%** - this is to show a reasonable level of overall mastery of the course material.
  - the **average** of your Exam 1, Exam 2, and Final Exam grades must **equal or exceed 60%** - this is to show that you understand at least a minimal reasonable level of the most important course concepts.
  - the **average** of your Homework assignments must **equal or exceed 60%** - because there are hands-on skills that are part of this course that are not tested as effectively on exams, this is to show at least a minimal level of Linux experience in addition to course concept mastery. Also, past experience in other courses has shown that, in general, students who do not put a solid effort into course homework assignments do not do well on course exams.
- If **all three** requirements above are **not** met, then your semester grade will be **either C-** or the letter grade computed according to the mapping given below, **whichever is lower**.
  - (That is, if a student had an overall semester average of 74% but a Homeworks average of 55%, that student would receive a **C-** for his/her semester grade; if a student had a Homeworks average of 61% and an Exams average of 71%, but an overall semester average of 65%, then that student would receive a **D** for his/her semester grade. You are expected to ASK ME if this aspect of the grading policy is not clear to you.)
- Including the three requirements noted above, your semester grade will be computed according to the mapping given below:

Overall Percentage (based on the given weights)	Exams Average	Homework Average	Letter Grade
>= 93	>= 60	>= 60	A
>= 90 and < 93	>= 60	>= 60	A-
>= 87 and < 90	>= 60	>= 60	B+
>= 83 and < 87	>= 60	>= 60	B
>= 80 and < 83	>= 60	>= 60	B-
>= 77 and < 80	>= 60	>= 60	C+
>= 73 and < 77	>= 60	>= 60	C
>= 73	< 60	any	C-
>= 73	any	< 60	C-
>= 70 and < 73	any	any	C-
>= 67 and < 70	any	any	D+
>= 60 and < 67	any	any	D
< 60	any	any	F

**Final Exam:**

Again, the Final Exam for this course is scheduled for **Monday, December 15, 3:00 - 4:50 pm**, in **BSS 408** (unless I announce otherwise). Note this time and date BEFORE making your end-of-semester travel plans.

**Students with Disabilities:**

Persons who wish to request disability-related accommodations should contact the **Student Disability Resource Center** in the Learning Commons of the Lower Library, **826-4678 (voice)** or **826-5392 (TDD)**. You can reach the Student Disability Resource Center's web site at:

<http://www.humboldt.edu/disability/>

Please note that some accommodations may take up to several weeks to arrange. If you are eligible for such accommodations, please contact me as soon as possible to discuss them.

**Add/Drop Policy:**

Students are responsible for knowing the University policy, procedures, and schedule for dropping or adding classes. You can find these on the web at:

<http://www.humboldt.edu/registrar/students/regulations/schedadjust.html>

You can find the University policies for repeating classes at:

<http://www.humboldt.edu/registrar/students/regulations/repeat.html>

Note that the CSU (and thus HSU) policies on withdrawing from and repeating courses changed as of Fall 2009:

- Students may withdraw from no more than 18 semester-units after the first four weeks of instruction; that is, students may withdraw from no more than 18 semester-units between census and the final 20% of instruction, and only then with a serious and compelling reason. (Note that: "Withdrawal from courses for reasons that are catastrophic, such as accident or serious illness do not count toward the 18-unit limit." [from the Registrar's web site])
- Students may repeat courses only if they earned grades lower than a C.
- Students may repeat up to 16 semester-units with grade forgiveness.
- Students may only repeat a course for grade forgiveness two times and each of these attempts counts toward the 16-unit maximum for repeats.
- Students may repeat up to an additional 12 semester-units with grades averaged.

**Please note** - as of Fall 2009, HSU is being much more strict about what constitutes a "serious and compelling reason".

The census date for Fall 2014 (before which you can drop without a W, and without it counting toward your 18 semester-units drop limit) is: **Monday, September 22th**

The last date for Fall 2014 to drop with a W on your transcript, with a serious and compelling reason, and subject to the 18 semester-unit drop limit, is: **Monday, November 3rd**

If you do drop the course, note that it is **your responsibility** to complete and submit the appropriate forms.

**Incompletes:**

Incompletes are rarely given and only in the case of a true emergency. They certainly are not appropriate for students who find they have fallen behind on assignments, missed a test, or taken on too much academic, work, or family responsibilities. For these situations, dropping the course would be appropriate (if that is still possible according to the University policies for dropping courses).

## Time Expectations:

Remember the general rule of thumb for college-level courses:

*To be successful in a course, you should plan to spend at least 3 hours outside of class for each 1 hour of college course credit. That implies an estimate of **at least 12 hours a week spent outside of class for this 4-credit course.***

However, you should be warned that:

- There will be some programming in this course, and writing programs can be a notorious time eater. Occasionally, a problem with code will take large amounts of time to locate and fix.
  - Starting early enough so that you have time to ask me questions when you run into problems can help with this...
  - ...why spend 4 hours struggling with a frustrating roadblock the night before the assignment is due, when you can spend 10 minutes composing an e-mail early in the week, work on other problems while waiting for the answer, and then get a reply that makes everything clearer as soon as you read it?
- There are aspects of this course that require practice to master, and it takes some much longer than others to master these. Practicing as much as possible helps.
  - (This means playing around with in-class examples, experimenting to see if something you are curious about really works like you think, doing further research on topics of interest, and so on.)
- Later concepts are built upon earlier concepts as the course progresses -- if you ask me as soon as you realize that some concept is not clear to you, that can help keep you from falling behind.
- Homework deadlines will **not** be extended because you waited too late to start or because you did not allocate enough time before the deadline to work on it; likewise, they will **not** be extended because of hardware or network failure. (Admittedly, campus failures might affect deadlines. But don't assume so until you have heard from me definitively.) You need to keep backups of your files at all times, and need to plan your schedule to be able to work on on-campus computers as necessary.
- If you have not completed an assignment by the deadline, your best choice is to submit whatever you have managed to do by then, as partial credit is your friend, to carefully study the posted example solution as soon as it is available, to ask me about anything there that is still unclear, and to get a good early start on the next homework.

## Academic Honesty:

Students are responsible for knowing policy regarding academic honesty. For more information, visit:

[http://www.humboldt.edu/studentrights/academic\\_honesty.php](http://www.humboldt.edu/studentrights/academic_honesty.php)

Observe that among the actions that are unacceptable are submitting another's program, code, or file as your own and failing to quote material taken from another person's written work. (Note that copying another student's comments is also unacceptable.)

All course work is to be the work of each student, **individually, unless** it is **explicitly** stated otherwise at the beginning of that course work's description. Except for explicit exceptions, this is **not** a group or team programming course. If group work is explicitly permitted for some assignment, the names of all students involved must be included on the work submitted. (For example, if **pair programming** is explicitly specified as being allowed for an assignment, then each pair-programmed file turned in will include both of the names of the students who worked on it as a pair.)

(**Important aside:** pair programming specifically means that two people sit at one computer, with one typing while the other says what to type. Both people are actively involved in the programming process. Pair-programming is **not** two people working at two computers, each doing different parts of the work individually. If

pair-programming is ever explicitly permitted, then you are expected to actually pair-program any files you do not complete on your own.)

(If an assignment does explicitly specify that it is acceptable to pair program or work in groups, make sure that you don't get into the situation where you are merely watching someone else learn.)

For homework assignments (that are not explicitly specified as permitting pair-programming), students may discuss general approaches **as long as no one involved in the discussion is writing anything down or typing anything during such discussions**. Students may also help one another in determining causes of program bugs, or in determining the meaning of compiler error messages. However, in general, students may not work together to complete homework assignments, one student should not instruct another in how to write the code for a homework assignment, and **any type of copying or modifying of another person's computer files, OR of providing computer files to another, related to homework assignments, is definitely over the line, and never justified**. This applies to copying of documentation and comments as well as to copying of program code.

Note that it is **your** responsibility to ensure that course assignment files are read-protected. If you are careless about this, and someone else copies your work, you will share the penalty. (In particular, be very careful about leaving work on shared network drives in campus labs, or in UNIX/Linux directories that are not read-protected.)

Learning takes hard work; when students turn in others' work as their own, it is a slap in the face to those seriously interested in learning. Not turning in an assignment results in no credit for that assignment, of course, but that is an honest grade. Work that violates the course honesty policy deserves a lower grade than that, and therefore the course policy is that work violating this policy will receive **negative** credit. A person providing a file for copying receives the same **negative** credit as the copier. Repeat offenses will be handled according to University policies.

## Asking Questions/Getting Help:

- Include CS 279 along with the subject of your e-mail in the **Subject** : line of any class-related e-mail that you send me. This will help your e-mail be more recognizable as a class-related message, and will make it less likely that I will accidentally overlook it.
  - That said, if I have not replied to your e-mail within 24 hours, please re-send it, just in case I did overlook it somehow.
  - Also, **DON'T INCLUDE** the word "password" in your e-mails to me -- `pwd` is a handy abbreviation to use instead -- because, due to phishing scams, HSU's spam filtering does not seem to like e-mails with that word in it! (Odd, but this was definitely the case in Spring 2010...)
- I try to check my e-mail (`ah270@humboldt.edu` or `alexander.hampel@humboldt.edu` or `alex.hampel@humboldt.edu` ) about once a day on weekdays, and about once over each weekend. This is another reason to start assignments early, so that you have time to receive a reply to any questions that might arise.
- You are encouraged to ask me questions in class, in office hours, and by e-mail. The most successful students are those who are not afraid to ask questions early and often (I will gently let you know if you are overdoing it), who do the assigned reading, who attend lecture and lab regularly, who start homeworks promptly after they are made available from the course web page, and who practice course concepts as much as possible.
  - It is better to ask a question sooner than later -- for example, it is better to send an e-mail with a specific question as soon as you think of it than it is to wait a day or two until the next class meeting or office hour. If you wait to ask such questions, you may not have time to complete the assignment.
  - It is perfectly reasonable if you send me a question and then end up finding out the answer yourself before you receive my answer; likewise, it is not a problem if you end up sending me several questions in separate e-mails (as you work on different parts of a homework while awaiting earlier answers).

- That said, I am expecting that you will ask **specific** questions – overly vague or broad questions are problematic.
  - (For example, an example of a specific question is, "When I try to run the UNIX command: (paste in the command), I receive the following error message: (paste in the error message) Can you point me in the right direction about what is wrong?" An example of an overly vague or broad question is: "Here's my UNIX shell script. Is it right?")

## Additional Coursework-Related Policies:

- You should not expect to be able to finish homework assignments during the lab sessions -- although you may occasionally get some lab time to work on homework assignments, typical lab sessions will include a lab exercise that is to be completed in lab. Even when you finish the lab exercise early, it will still be the case that, like any college-level course, you should expect to put in a significant amount of time outside of scheduled class meetings (lectures and labs) doing the assigned reading, working on homework assignments, and practicing concepts discussed.
- Each homework assignment must be submitted as is specified on its handout to be accepted for credit. This may vary for different assignments. Often, parts of assignments will be submitted using a special tool on nrs-labs.
- Each assignment will be clearly marked with one or more due dates (a single assignment could have multiple parts with multiple due dates).
  - **No assignments will be accepted late. If you wish to receive any credit for an assignment, then you must turn in whatever you have done, even if it is incomplete, by the deadline. Partial credit is usually preferable to no credit.** Note that "the computer/network/etc. going down" is no excuse. If you leave an assignment for the last minute and there are technical problems, you still must turn in whatever you have by the deadline. As with any work done on computer, make frequent back-ups of your files!
  - You may submit multiple versions of assignment files before the deadline; I will grade the latest pre-deadline submission unless you inform me otherwise. This is to encourage you to turn assignment parts in early (since you will know that you can always turn in an improved version if further inspiration strikes). You also don't have to worry about forgetting to submit something that has already been submitted.
  - If for any reason you cannot submit course work using the submission tool on nrs-labs, e-mail me your homework files as attachments by the deadline, and then submit the files using the submission tool as soon as you are able. The e-mailed files will establish that these files were completed by the deadline.
- The tool that you will be using to submit some assignment parts results in a file that serves as your "receipt" for having submitted items. You are expected to retain these "receipt" files at least until a grade has been posted to the course Moodle site for that assignment. If there is a system glitch or other hardware/software/network problem, you may be asked to make me a copy of one or more receipt files; if you do not have them, then you will not receive credit for the files involved. These receipt files are for your protection!
- It is nearly impossible to write unambiguous specifications. If you have questions about "what he means", get them resolved very early in the development cycle by **asking**.
- There is more to computer commands, statements and files than simply whether they "run" or not...
  - Part of your grade will be determined by how well your work meets the written requirements. Work that you turn in is expected to meet handout specifications precisely; when one eventually works within a team on large projects, following the specifications precisely is vital, and can mean the difference between a working product and one that just sits there.
  - Note that work may be graded on **style** as well as on whether it runs properly and whether it precisely meets the homework specifications and requirements. Discussions on style will be ongoing throughout the



semester.

- Some course work may be graded simply based on whether it has been attempted (the instructor's decision is final as to whether this is the case) -- other course work may be graded for correctness, style, and whether it meets specifications. You will not know in advance which will be the case.

### Additional Grading-Related Policies:

- If you would like me to e-mail certain course grades to you during the semester, then you must give me permission in writing on the course information form.
- Instant response (Socrative.com) questions will be given during most labs, and graded lab exercises will be given during most lab sessions.
  - The **two lowest lab exercise grades** will be dropped from your grade.
  - Between the ample quantity of Instant response questions and the dropped lab exercise grades, then, you can be absent several times from non-exam lecture or lab sessions without direct penalty, for whatever reason (although you are, of course, still responsible for the material covered on those days, and it is **your responsibility** to determine what that material is).
- Note: **NO** homework grades are dropped; **ALL** homework grades count toward your homework average. Every homework includes important practice of course fundamentals.

### Additional Course Policies:

- You are expected to read this syllabus and be prepared to sign a statement that says you have received it, have read it, and understand its contents.
- Exam dates are given in the course schedule below. Make-up exams are only possible by special prior arrangement or because of a valid medical excuse.
- You should monitor your e-mail for course-related messages. The University provides a means for you to specify your preferred e-mail address, so if you wish to receive e-mail into an account other than the one HSU provides, change your preferred e-mail address in **both** Account Center and Moodle accordingly. Course-related messages from me will include CS 279 in the Subject : line.
- You are expected to check the public course web page and the course Moodle site regularly --- course handouts, homework assignments, examples from lectures and labs, and possibly more will be posted to the public course web page, and grades will be posted to the course Moodle site. You are expected to monitor your posted grades and let me know about any discrepancies.
- When reading assignments are given, you are expected to prepare (read and study) assigned readings before class and to participate in class discussions. Projected examples will be utilized frequently during discussion. You should understand that there may be material in the reading that will not be discussed in lecture/lab, and material in the lectures/labs that may not be found in the reading. You are responsible for both.
- **Attendance and disruptive behavior:** Students are responsible for knowing policy regarding attendance and disruptive behavior:  
[http://www.humboldt.edu/studentrights/attendance\\_behavior.php](http://www.humboldt.edu/studentrights/attendance_behavior.php)
- Regular attendance at lecture and lab sessions is expected. If you should happen to miss a lecture or a lab, then you are responsible for finding out what you missed. "I wasn't there that time" is never an acceptable excuse. Lecture and lab notes are not posted, although many of the projected examples will be made available on the public course web site. Instant Response questions and graded lab exercises missed **cannot** be made up later.
- As previously mentioned, during lab sessions, there may be lab exercises due during that lab session. Once a lab's lab exercise is complete, the remaining lab time should be used to continue work on the current course

homework assignment, to practice course concepts, and/or to ask questions about course-related topics.

- **Late arrival to class:** Please attempt to come to class on time, with your headphones put away and your cell phones turned off. If you must arrive late or leave early, please do so with the least possible distraction to other students. If your late/early habits become disruptive, you may be asked to leave the class permanently.
- **Class disruption:** University policy requires that instructors eliminate disruptions to the educational process. Distractions such as excess talking, ringing cell phones, working on assignments for other classes, inappropriate or distracting laptop/tablet/smartphone/gadget use, demonstrations of affection, packing of books early, loud music leaking from headphones, chronic late arrivals or early departures, excessive comings and goings or other behaviors that disrupt the class are not acceptable. Students indulging in such behaviors will first be warned before being required to leave the class permanently.
- **Emergency Evacuation:** Please review the evacuation plan for the classroom (posted on the orange signs), and review the campus Emergency Preparedness web site at:

[http://www.humboldt.edu/emergencymgmtprogram/campus\\_emergency\\_preparedness.php](http://www.humboldt.edu/emergencymgmtprogram/campus_emergency_preparedness.php)

...for information on campus Emergency Procedures. During an emergency, information regarding campus conditions can be found at **826-INFO** or:

<http://www.humboldt.edu/emergency>

## **Tentative Course Schedule: (subject to change!)**

### ***Week 1: August 25, 26, 27***

- Reading: Chapter 1 of the course text
- Topics: Intro to course; a little UNIX and Linux background and history; getting started using UNIX and Linux commands
- Homework 1 out

### ***Week 2: September 2, 3***

- Reading: Chapter 2 of the course text
- Topics: UNIX/Linux basics/fundamentals
- Homework 1 due, Homework 2 out

### ***Week 3: September 8, 9, 10***

- To be announced
- Topics: Continuing with UNIX/Linux basics/fundamentals
- Homework 2 due, Homework 3 out

### ***Week 4: September 15, 16, 17***

- Reading: Chapter 3 of the course text
- Topics: More on files and operations on files
- Homework 3 due, Homework 4 out

### ***Week 5: September 22, 23, 24***

- Reading: Chapter 4 of the course text

- Topics: Data manipulation using filters, review for Exam 1
- Homework 4 due

***Week 6: September 29, September 30, October 1***

- **Monday, September 29: Exam 1**
- Reading: to be announced, but including Section 7.2 of the course text
- Topic: intro to bash shell programming
- Homework 5 out

***Week 7: October 6, 7, 8***

- Topics: Continuing with bash shell programming
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- Homework 5 due, Homework 6 out

***Week 8: October 13, 14, 15***

- Reading: Chapter 5 of the course text
- Topics: More on UNIX/Linux utilities
- Homework 6 due, Homework 7 out

***Week 9: October 20, 21, 22***

- Reading: Chapters 8 and 9 of the course text
- Topics: Intro to vi and emacs
- Homework 7 due, Homework 8 out

***Week 10: October 27, 28, 29***

- Reading: Chapter 12 of the course text
- Topics: UNIX and IP networking/communication
- Homework 8 due, Homework 9 out

***Week 11: November 3, 4, 5***

- Reading: to be announced
- Topics: Anatomy of UNIX/Linux processes; review for Exam 2
- Homework 9 due

***Week 12: November 10, 12***

- **Wednesday, November 12: Exam 2**
- Reading: to be announced
- Topics: more on UNIX/Linux internals and services
- Homework 10 out

***Week 13: November 17, 18, 19***

- Reading: Chapter 14 of the course text
- Topic: Introduction to UNIX/Linux system administration
- Homework 10 due, Homework 11 out

***Thanksgiving Break - November 24-28***

***Week 14: December 1, 2, 3***

- Topic: Continuing with introduction to UNIX/Linux system administration
- Homework 11 due, Homework 12 out

***Week 15: December 8, 9, 10***

- Topics: to be announced, review for Final Exam
- Homework 12 due

***Final Exam:***

MONDAY, December 15, 3:00 - 4:50 pm, in BSS 408 (This has been changed from the previously stated date/time)