CSCI 3190 (Directed Study — UNIX Power Tools), Spring 2004
Syllabus

1 Course description

In CSCI 1320 (PAD I) we introduce students to the basics of traditional UNIX command-line tools. These tools may seem clunky and primitive compared to the GUI-based tools students are more apt to be familiar with. But behind the clunky-seeming interface there is a lot of power and flexibility, in part because this traditional environment includes a number of "power tools" that can be great timesavers for the not-so-novice user. In this course we will look at some of these tools and also at the underlying UNIX philosophy/culture.

The following are some topics we will discuss; others will be included as time and students' interests permit.

- Command shells and shell scripts — timesaving interactive features, scripting, pipes and I/O redirection, and how I/O redirection meshes with standard I/O in programming languages.
- The `make` utility.
- Text-based utilities (`grep`, `sed`, etc.).
- Text editors. (`vi` can do a lot more than you might think.)
- Text formatting with `latex` (the UNIX enthusiast's alternative to word processing).

2 Basic information

Class meeting times and location

- M 2:30pm – 3:20pm, Halsell 340.

Prerequisites

- CSCI 1320 or equivalent.

Instructor and contact information

- Dr. Berna Massingill.
- Office: Halsell 201L.
- Office phone: (210) 999-8138.
- E-mail: `bmassing@cs.trinity.edu`. (Often e-mail is the best way to reach me.)
- Office hours:
  - Monday/Wednesday 12:30pm – 1:30pm

- Monday 3:30pm – 5:30pm
- Tuesday 12:30pm – 3:30pm
- Thursday 1pm – 4pm

In addition to these scheduled office hours, you are welcome to drop by and see if I am in my office and free to talk, or you can make an appointment by calling me or sending me e-mail. If I am not in my office during scheduled office hours, I should be somewhere in the building (perhaps in one of the labs helping another student), and there will usually be a note on my door saying where to find me.

3 Course materials

Textbook

There is no required textbook for this course. The course Web page has links to some useful on-line reading, parts of which you will be expected to read/skim/consult.

If you want something hardcopy, any bookstore with a sizable technical-reference section will likely have many introductory books on UNIX or Linux. The list of references below includes two (*UNIX for the Impatient* and *Think UNIX*). (The remaining books on this list are more oriented toward Unix philosophy/culture and make for interesting reading.) If you like the O'Reilly "In a Nutshell" books, you may want to acquire *UNIX in a Nutshell* or *Linux in a Nutshell*. O'Reilly also publishes many books on UNIX-related tools, which are good to have on one's bookshelf as one's interests and finances dictate.

Web page

Most course-related information (this syllabus, homework and reading assignments, etc.) will be made available via the World Wide Web. The course Web page is a starting point for Web-accessible course material; you can find it linked from my home page (`http://www.cs.trinity.edu/~bmassing`), directly at `http://www.cs.trinity.edu/~bmassing/Classes/CS3190_2004spring/`, or via Tiger's Lair (`http://bb.trinity.edu/`).

Other references

- Paul W. Abrahams and Bruce R. Larson. *UNIX for the Impatient*. Addison-Wesley, 1995.
- Mike Gancarz. *The Unix Philosophy*. Digital Press, 1995.
- Brian W. Kernighan and Rob Pike. *The UNIX Programming Environment*. Prentice-Hall, 1984.
- Jon Lasser. *Think UNIX*. Pearson Education, 2000.
- Eric S. Raymond. *The Art of UNIX Programming*. Addison-Wesley, 2003.

4 Course requirements

Grading

Grades in this course will be determined on the basis of class attendance/participation, homeworks, and a project, weighted as follows.

Component	Maximum points
Homework	about 200
Project	about 50
Class participation	50

Revised 3/29/2004: No project will be required, and the total points for homework will be about 100.

Numeric grades will be calculated as a simple percentage, by dividing points earned on the above components by maximum points. These numeric grades will then be converted to letter grades based on a curve, but in no case will the resulting letter grades be worse than students would receive based on the following scheme.

Numeric grade	Letter grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Homework assignments

There will be frequent short homework assignments. Detailed requirements will be provided as part of each assignment, and due dates will be announced via the course Web page.

Project

Each student will also complete a modest-size project. Detailed requirements and due dates will be announced later in the course.

Revised 3/29/2004: No project is required. However, students can earn up to 30 points of extra credit by completing a suitable project. "Suitable" in this context means (1) related to the course and (2) approved by the instructor. The amount of extra credit will depend on the scope and quality of the work turned in; roughly, every 10 points of extra credit should represent successful completion of an amount of work comparable to one of the homework assignments.

Attendance

Regular class attendance is strongly encouraged; class participation grades will be based largely on attendance.

E-mail

Course-related announcements will sometimes be made by sending e-mail to the Trinity e-mail addresses of all registered students. Students are strongly encouraged to read mail sent to their Trinity addresses frequently. An archive of such announcements will be provided via the course Web page.

Late and missed work

Unless otherwise stated for a particular assignment, homework will be accepted up to one class period late, *but no more*, at a penalty of 10 percent off per working day. This penalty may be

waived or additional time allowed *at the instructor's discretion* in cases of illness or conflict with a university-sponsored activity.

If you have unusual circumstances (as we all sometimes do), please discuss these with the instructor as far in advance as possible.

Collaboration and academic integrity

Unless otherwise specified, all work submitted for a grade (homework assignments and exams) must represent the student's own individual effort. Discussion of homework assignments and course material among students is encouraged, but not to the point where detailed answers are being written collectively. Answers that are identical beyond coincidence are in violation of Trinity's Academic Integrity Policy and *will result in disciplinary action, including, but not limited to, a failing grade on that assignment for all parties involved.* You are responsible for the security of your work, both electronic and hard copy.