# Essentials: Communication, Content, and Structure

## Communications

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| Class Meetings: | Monday, Thursday 14:45 - 16:00, Room C107HN |
| Office: | HN1090J |
| Office Hours: | Tuesdays, 11:00 - 13:00 |
| Email: | stewart.weiss@hunter.cuny.edu |
| Telephone: | (212) 772-5469 |

You can see me during my office hours without an appointment. If you need to see me at a different time, you need an appointment. The best way to make an appointment is to send me email. I can sometimes schedule appointments if you see me before or after class. You can also call my office and leave a message. Regarding email, please note that I read only plain ASCII plain text messages, not HTML or MicroSoft Word-encoded documents. Also note that any email concerning anything that might fall under the FERPA regulations (e.g. questions about grades or other class related issues) must be sent from your "myhunter" account.

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## Resources

*Textbooks:* Dave Taylor, *SAMS Teach Yourself Unix in 24 Hours*, *Third Edition*. Sams Publishing, 2001. ISBN 0-672-32127-0. (out of print)
Andrew L. Johnson, *Elements of Programming with Perl*, Manning Publications, 1999, ISBN 1-884777-80-5. (out of print)
*Because these books are out of print, you must get them second hand from any one of several used-book websites or dealers.*

*Computing Facilities:* All registered students will be given user accounts on the Computer Science UNIX network unless they already have one. These accounts provide access to all UNIX hosts in the network, including those in the 1000G lab on the tenth floor of Hunter North. This lab is available 24 hours a day, 7 days a week, to students enrolled in selected courses. The accounts also enable students to remotely login to the network using an *ssh* client. See ***Programming and System Access*** below for instructions on how to obtain an *ssh* client for a home computer.

*Website:* All course materials, including lecture notes, slides, assignments, syllabus, and other resources, including this document, are posted on my website, at `http://www.compsci.hunter.cuny.edu/~sweiss/course_materials/csci132/csci132_f16.php`

*Discussion Board* This class will use Piazza as a discussion board. Please see the section below entitled "Course Materials, the Web, Piazza, and Blackboard" for the details.

## Prerequisites

None.

## Course Objectives and Content

This is an introduction to elementary computer programming and the UNIX operating system. It also serves as a gateway into the bioinformatics concentration/program. Students are taught fundamental programming

principles that can be applied to any programming language, but Perl, which is a versatile and yet easy-to-learn language, is what is taught in this course. Students are given a conceptual overview of the UNIX operating system and programming environment, and a practical introduction to the use of various UNIX tools, such as filters and utilities. This is primarily a pragmatic course with an emphasis on skills acquisition; students will learn how to get things done quickly and easily in a UNIX environment. Specific learning outcomes are that the student will

1. know the basic types of variables and methods of storing data in Perl;
2. know the basic statements structures, including iteration and conditional and selective branching;
3. know how to create and use functions with parameters;
4. know how to redirect I/O within a program and use operating system commands from within Perl;
5. know how to construct and use Perl patterns for manipulating textual data;
6. know various list processing techniques;
7. write bash scripts that use command line arguments and have conditional control structures;
8. understand the structure of the UNIX file hierarchy, permissions and security within UNIX, and how to customize the `bash` environment;
9. use UNIX filters for manipulating and processing textual data;
10. use pipelines and file globs for processing textual data;
11. identify the variable inputs, outputs, and fixed parameters of a problem statement;
12. use top-down stepwise refinement to convert an informal problem statement into a precise, pseudo-code description of an algorithm;
13. understand the structure of man pages and know how to use the information contained in them;
14. know how to use key word searches combined with filtering techniques to do topic searches in the man pages.

## Assignments, Exams, and Grading

We will cover a lot of material. Students are expected to do all of the specified reading, complete all assignments on time, and work independently, unless stated otherwise. There will be many (seven or eight) programming assignments, a non-programming assignment, and a single, comprehensive final exam.

Your final grade will be based on the weighted average of the assignment grades and the final exam grade. Specifically: the assignments are worth 80% in total, and the final exam, 20%.

***The final exam is scheduled for Monday, December 19th, from 13:45 to 15:45 in the classroom.***

## Lateness and Incomplete Grades

All assignments must be submitted by their due dates. Late assignments will not be accepted. Failure to take the final exam counts as a zero grade on that exam. The only exceptions to these two rules are in the case that you have a legitimate medical or personal emergency that prevents your timely completion of homework or sitting for an exam and have notified me in a timely manner about this emergency. I will schedule a make-up exam or allow a homework extension only in that case. I do not give incomplete (IN) grades except to those students who were unable to complete the work because of legitimate, documented medical or personal problems, and this is entirely at my discretion.

## Class Schedule

The document at

`http://www.compsci.hunter.cuny.edu/~sweiss/course_materials/csci132/csci132_f16_schedule.pdf`

contains the detailed class schedule.

## Class Calendar

The last day to withdraw is November 10. There is no class on Monday September 5, Monday October 3. Monday October 10, and Thursday, November 24. The last day of class is Monday, December 12.

## Programming and System Access

All students enrolled in the class are given accounts on the Computer Science Department's network. This entitles you to around-the-clock access to the 1000G lab, which is equipped with Linux workstations. This lab is normally open "24/7". The account also enables you to work work from home or another remote computer by connecting to any of the lab machines remotely. The details are described below.

The advantage of working in the lab, as opposed to working remotely, is that you will be sitting at the console of a Linux host and will not be subject to potential disconnections that can take place when working remotely. You will also be much less affected by network problems than if you connect remotely from outside of Hunter. The disadvantage is that you have to be in school to do this.

When you are in the lab there are a few important rules that must be followed:

- Never power down a machine for any reason.
- Never leave a machine without logging out.
- Never use lockscreen to lock the screen in your login.

There are several other rules regarding lab use; they are posted there. Please take the time to read them and then follow them.

The Computer Science Department makes a UNIX host, named

`eniac.cs.hunter.cuny.edu`,

available to students who have accounts on the network. eniac is a gateway computer - you will be able to login to this host from any computer that has *ssh* client software on the Internet. Once you login to `eniac`, you must login from `eniac` to one of the computers in the 1000G lab, which are named `cslab1`, `cslab2`, `cslab3`, and so on, up to `cslab29`. You cannot *ssh* directly to those machines from outside of Hunter College for security reasons. For example, you can first login to `eniac`, and then when it gives you a prompt such as "`$`", you would type

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ssh cslab5
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and re-enter your network password at the prompt from `cslab5`.

Many computers come with a version of *ssh* already installed. If yours does not, you can get one for free. There are several free versions of *ssh*. *OpenSSH* is an open source version developed for the *OpenBSD* project. *PuTTY ssh* is a free version for the Windows operating systems, available at

`http://www.chiark.greenend.org.uk/~sgtatham/putty/`.

Macintosh computers come with a command-line *ssh* client.

## Course Materials, the Web, Piazza, and Blackboard

All lecture notes will be posted on the course's home webpage (whose URL is above), which does not require special privileges to access. The only thing for which I use Blackboard is for posting of grades, which will be posted in the grade center there. This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates and me. Rather than emailing questions to me, you are to post your questions on Piazza. If you have any problems or need feedback for the developers, email *team@piazza.com*.

You can find our class page at:

`https://piazza.com/hunter.cuny/fall2016/csci13201/home`.

An invitation to join the Piazza discussion board will be sent to your Hunter College email address close to the start of the semester. You should accept this invitation. Your Hunter email address can be used for reading and sending messages to the group, or you can change the email address or add another on the settings page. In fact, you can request to join the group with any email address you choose, at

`http://piazza.com/hunter.cuny/fall2016/csci13201`

I require that you use the following protocol if you have a question:

1. Check whether the question you want to ask has been posted and answered on Piazza.
2. If it has been answered, you are finished. If not, post the question on Piazza.
3. Anyone in the class can answer the question. If no one else answers the question in a timely manner, I will post an answer to it.

I will ignore any non-personal questions sent to my Hunter email address. Personal questions (such as a questions about a grade or a missed class or alternative times to meet with me) should be sent via private email to my Hunter email address, not to Piazza.

## Academic Honesty

Unless I state otherwise, all assignments and projects are to be your work alone. If someone else does part of this for you, it is considered to be academic dishonesty. Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The college is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures. In this class, I will enforce the University's Policy on Academic Integrity and bring any violations that I discover to the attention of the Dean of Students Office.

## ADA Compliance

In compliance with the *American Disability Act of 1990* (ADA) and with *Section 504* of the *Rehabilitation Act of 1973*, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (emotional, medical, physical and/or learning) consult the *Office of AccessABILITY* located in Room E1124 to secure necessary academic accommodations. For further information and assistance, the student can call (212-772-4857)/TTY (212-650- 3230).

## Changes to This Syllabus

Except for changes that substantially affect the implementation of the grading statement, this syllabus is a guide for the course and is subject to change with advance notice. Any changes will be posted to the course website and to the Piazza group for the course.