



Course Syllabus and Structure

1 About This Class

This course is an upper-level course for students who are motivated and interested in learning about open source software and want to learn how to participate in open source software projects. It is primarily an activity-based class, run like a seminar, with many in-class activities and many out-of-class activities as well.

2 Communications

Class Meetings: Tuesday, Friday 9:45 - 11:00
Office: HN1090J
Office Hours: Tuesday, Friday 11:15 - 12:15
Email: stewart.weiss@hunter.cuny.edu
Telephone: (212) 772-5469

It is critical that you read your Hunter email at least once per day, and that, if I send email to you that requires a response, you respond within a day, unless I state otherwise.

Regarding email, please note that I will not read email containing Microsoft Word-encoded documents. If you need to attach a document, it must be plain text or a PDF. Note too that all email must be sent from your “myhunter” account. It is a violation of federal law to have an email conversation about school-related matters using a non-school account (because it might be insecure and open to viewing by third-parties.)

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 with a few suggested times. You can also call my office and leave a message. Sometimes I will be able to schedule meetings before or after class.

3 Textbooks

There are a number of books that will be used in this course. You do not have to purchase any of them; the ones we use are all available on-line for free. The course website has links to them, but they are here as well:

Producing Open Source Software, 2nd edition, Karl Fogel

<http://producingoss.com>

A book about creating open source software, but it has many relevant chapters for those who want to participate in an existing project.

The Architecture of Open Source Applications, Amy Brown and Greg Wilson (editors)

<http://www.aosabook.org/en/index.html>

A collection of articles in which each chapter describes the architecture of an open source application, including how it is structured, how its parts interact, why it is built that way, and what lessons have been learned that can be applied to other big design problems.



Practical Open Source Software Exploration, Greg DeKoenigsberg, Chris Tyler, Karsten Wade, Max Spevack, Mel Chua, and Jeff Sheltren
https://quaid.fedorapeople.org/TOS/Practical_Open_Source_Software_Exploration/html
Although this book was last revised in 2010, much of its content is independent of its age, and it is very relevant to anyone considering working in the open source community.

ProGit, 2nd edition, Scott Chacon and Ben Straub
<https://git-scm.com/book/en/v2>
This is an excellent tutorial and reference on using git (not GitHub).

The Linux Command Line, William Shotts
<http://linuxcommand.org/tlcl.php>
There are many books about how to use `bash` and the Linux command line. This one is very accessible and easy to follow.

4 Online Resources

- All course materials, including lecture notes, slides, assignments, syllabus, and other resources, including this document, are posted on the course website:
http://www.compsci.hunter.cuny.edu/~sweiss/course_materials/csci395.86/cs395.86_s19.php
- This class will use *Piazza* as a discussion board. Please see Course Materials and On-line Resources below for the details.
- In addition, other materials will be found on *GitHub*. The class has a GitHub organization, `hunter-college-ossd-spr19`, which can be found at <https://github.com/hunter-college-ossd-spr19>.
- All students will need to create accounts on *OpenStreetMaps* and *Wikipedia*. Instructions are contained in the *Piazza* discussion board.

5 Objectives

This course has several objectives. It is intended to give students direct experience in the creation of **free and open source software (FOSS)** technology projects while simultaneously giving them a deeper understanding of the theoretical and practical foundations of open source and its societal, commercial, legal and philosophical origins and effects. It is hoped that students will participate in the discourse within open source communities.

Among the outcomes of this project are that the student

- will be able to explain to others the nature of open source software, particularly how it differs from proprietary software;
- will become a contributing member of a software development community;
- will be able to choose an appropriate license for open source things in general and to explain what can and cannot be done with software that has a specific license;
- will be able to explain how software licensing works in general, what choices of license exist; and
- will be able to give several examples of the ways in which companies earn money in the open source ecosystem.

Deliverable outcomes include

- documented evidence of contributions to open source communities and/or projects;



- public and private repositories of work for the course on *GitHub*;
- a weekly blog that chronicles the student's work and musings on matters related to open source.

Specific tool-chains and technology that the student will explore and learn to use well include:

- version control systems, and *git* in particular,
- issue trackers,
- communication channels such as *IRC*,
- markdown languages, such as standard *Markdown*, *Wiki Markup*, and *GitHub Markdown*,
- documentation systems,
- tools in the *linux/unix* programming environment such as `bash` and `make`

6 Prerequisites

All students should have completed the first three programming courses, CSci 127, 135, and 235. Exceptions might be made for those who have not had CSci 235.

7 Course Structure

The first version of this course was a collection of independent study projects with a relatively small group of students. This instance is a pilot course. A pilot course is still an experimental course because the syllabus has not been tested in actual use. It is run as a seminar. Much of the learning is through independent individual and group activities, whether they take place in the classroom or outside of it. The instructor's role is to serve as a mentor and guide.

As is true for any three-credit course in Hunter College, students should expect to work about one hundred fifty hours over the course of the semester.

8 Syllabus

This is a list of topics by category, not by chronological order in the course. The exact sequence of topics is in the class schedule. In general, each week there will be a conceptual topic and practical activity or discussion.

- Context and Overview
 - Open-ness in general: open source software and hardware, open data, open organizations (government, education, etc.)
 - Principles of open source - the *Open Source Definition* and the *Free Software Definition* and their ramifications
 - History and background of open source software
 - Open source culture and community
 - Humanitarian open source software
- Evaluating and Assessing Projects and Communities
 - Understanding and interpreting project metadata
 - Evaluating the suitability of a project for the purpose of contributing to it



- Case studies of selected projects
- The Business of Open Source
 - Business models: How open source companies make money
 - The role of open source in the software industry
 - Careers in Open Source
- Contributing to Projects
 - Types of contributions to software projects
 - Ways of getting involved
 - Early and Easy Contributions:
 - * Contributing to *OpenStreetMap*
 - * Contributing to *Wikipedia*
 - Project Guidelines
 - Codes of Conduct
- Tools and Technology
 - Programming Tools and Technology
 - * markdown, make, bash
 - Collaborative software engineering tools
 - * version control systems (*git*)
 - * issue tracking
 - * documentation tools (e.g., *Doxygen*)
 - Software engineering tools for distributed collaboration
 - * communication tools (e.g., blogs, *Slack*, *IRC*)
 - * remote, distributed version control (e.g., *GitHub*, *GitLab*)
 - * online, web-based issue trackers: *Bugzilla*, *GitHub's* issue tracker, others
- Project Selection/Assignment
 - Getting involved in the community
 - Setting up project development environment
 - Picking some issues to work on
 - Solving the issues and issuing pull requests
- Intellectual Property Rights and Licensing
 - intellectual property
 - copyrights, patents, and trademarks
 - types of software and non-software licenses
 - interpreting and choosing licenses
 - avoiding plagiarism
- Team Reports



9 Class Calendar and Important Dates

There are no classes on Monday February 12 nor any day between April 19th through April 28. The last day to drop without a grade of W is February 14. ***The last day to withdraw is April 1.*** The last day of class is Monday, May 14.

10 Assignments, Exams, and Grading

The grade will be based upon a weighted average of the evaluation of contributions, homework, class participation, and in-class readiness assessment tests. To be precise:

- Contributions (30%) are pull requests that have been accepted, or those that were not accepted but, in my judgment deserve to be treated as if they were accepted, or that represent significant work in any case. Contributions to *OpenStreetMaps* and *Wikipedia* fall into this category, though their weight is much smaller than the weight of code and documentation contributions to large projects.
- Homework (30%) is work that you submit in response to assignments that I post on the website or distribute in class.
- Class participation (20%) consists of writing weekly blog posts (see below), participating in class activities and discussions, and oral presentations made to the class.
- Readiness assessment tests (20%) are written tests given in class based on readings assigned or materials taught in class prior to the test. The number of assessments will depend upon factors yet to be determined, but the goal is to give six such assessments, of which the five highest scores will be used.
- The class is scheduled to have a final exam on Monday May 20, from 9:00 to 11:00, but ***there will not be a final exam.***

11 Blogs

Maintaining a course journal is a requirement for this course. Writing a journal is a way to improve your communication skills and also serves as an indicator of what you will have accomplished in this class. We will use a blog for keeping these journal entries. Instructions for setting up the blog as well as what goes into it will be posted on *GitHub*.

12 Lateness and Incomplete Grades

Work that has a deadline, such as a weekly blog post, or a homework assignment, must be submitted by that deadline if it is to receive a non-zero grade. Work that has no deadline, such as a contribution to an existing project, has no such requirement. Unless there are extenuating circumstances, I will not give a grade of INC in this project. Let us all make an effort to meet our challenges in a timely way!

13 Programming and System Access

Everyone enrolled in this class has already taken classes at Hunter and should be familiar with the computing facilities. Hence this syllabus does not describe them. Everyone should have an account on the Computer Science Department's network. Anyone who does not should notify me immediately, so that I can have one created.

As a reminder, some of the important rules that must be followed when you are physically in the lab and using one of the lab's computers are:



- 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 other rules. The Department's *System Administrator*, Tom Walter, maintains a webpage: http://www.geography.hunter.cuny.edu/tbw/CS.Linux.Lab.FAQ/department_of_computer_science.faq.htm, that contains useful advice, help, rules, and information about the labs. You must read this webpage to make sure you know what is allowed and what is not allowed.

14 Course Materials and On-line Resources

- 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.
- Piazza will be used for on-line 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.
- GitHub will be used extensively for repositories of source code, some assignments and activities, and some notes as well.

You can find the discussion board at:

<https://piazza.com/class/jqn0cj3a83z2gk>.

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

piazza.com/hunter.cuny/fall2019/cs39586

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.

15 Academic Honesty

The *Oxford English Dictionary* states that “plagiarism is the act or practice of taking someone else’s work, idea, etc., and passing it off as one’s own; literary theft.” If you pass someone else’s work as your own you have committed *plagiarism*, which is an act of academic dishonesty. 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.

16 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).

17 Hunter College Policy on Sexual Misconduct

In compliance with the *CUNY Policy on Sexual Misconduct*, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the *Bill of Rights for Hunter College*.

- **Sexual Violence:** Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).
- **All Other Forms of Sexual Misconduct:** Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.
- **CUNY Policy on Sexual Misconduct** Link:<http://www.cuny.edu/about/administration/offices/1a/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

18 Changes to This Syllabus

Because this is a pilot course, it is hard to predict exactly what will be covered or how much time will be spent on each topic. Except for changes that substantially affect the implementation of the grading statement, this syllabus should be interpreted as a guide for the course and viewed as subject to change with advance notice. Any changes will be posted to the course website and to the Piazza group for the course.