COMPILER DESIGN

CSc 375, Spring 2020

ADMINISTRATIVE DETAILS

COURSE WEB SITE

http://cs.union.edu/csc375

CLASS MEETINGS

The course will meet via Zoom meeting at 2pm on Thursdays. Here are the Zoom meeting details for our class meetings. The meeting requires a password – see you email for details. Please note that the class meetings will automatically be recorded.

Join Zoom Meeting
https://union.zoom.us/j/331005234

Meeting ID: 331 005 234

One tap mobile
+16465588656,,331005234# US (New York)
+13126266799,,331005234# US (Chicago)

Dial by your location
+1 646 558 8656 US (New York)
+1 312 626 6799 US (Chicago)
+1 346 248 7799 US (Houston)
+1 669 900 6833 US (San Jose)
+1 253 215 8782 US
+1 301 715 8592 US

Meeting ID: 331 005 234

Find your local number: https://union.zoom.us/u/aIlO6MwIU

INSTRUCTOR INFORMATION

name: Aaron G. Cass
e-mail: cassa@union.edu
web site: www.cs.union.edu/~cassa
office: Steinmetz Hall Room 220
office phone: 388-8051
home phone: 382-9671 (before 10pm please)

OFFICE HOURS

If you need help, or just want to chat, please:

• Schedule a meeting, especially if you think it will not be quick. To schedule a meeting with me, go to http://cs.union.edu/cassa/schedule.html and follow the easy instructions. If you and a classmate have similar questions, feel free to schedule a meeting together with me.

When the time of your meeting arrives, you can join the Zoom meeting with the following information:
https://union.zoom.us/j/605736035

Meeting ID: 605 736 035

One tap mobile
+16465588656,,605736035# US (New York)
+13126266799,,605736035# US (Chicago)

Dial by your location
+1 646 558 8656 US (New York)
+1 312 626 6799 US (Chicago)
+1 301 715 8592 US
+1 346 248 7799 US (Houston)
+1 669 900 6833 US (San Jose)
+1 253 215 8782 US

Meeting ID: 605 736 035
Find your local number: https://union.zoom.us/u/aIlO6MwIU

GOALS

Your goals in this course should be:

1. Learn how compilers and interpreters work.
2. Learn about the different parts or stages of a compiler.
3. Learn about data structures used in compiler design and implementation.
4. Become more familiar with formalizations of programming language constructs.
5. Get practice writing parts of a compiler.
6. Become familiar with programming in a lower-level language (C) than have used in most of your computer science classes here at Union.

My goal is to help you accomplish these goals by filling our class meetings with useful and fun exercises and discussion and by giving you plenty of practice outside class in the form of projects to work on, readings to do, and quizzes and exams to take. I strongly believe that you will learn primarily from working on problems on your own and with others. I will give you plenty of practice with this, both in and outside of class.

PREREQUISITES

- C- or higher in CSC 151 or CSC 250
- Recommended: CSC 260

REQUIRED TEXT

**Ground Rules**

**Attendance and Reading**

While I do not plan to take attendance, I expect you to come to all class meetings. My goal is to fill our class time with activities that will help you to master the material, so it will therefore be worth your while. I further expect that you will have at least skimmed the reading for class prior to that class meeting.

**Late Work and Make-ups**

Projects will **not** be accepted late.

If you will be unable to take an exam on the scheduled date, you must **let me know ahead of time**, so we can schedule a different exam for you (perhaps before others take theirs). If you are unavoidably detained because of illness or family crisis, please let me know as soon as possible.

**Accommodations**

I encourage students with disabilities to discuss with me, during the first two weeks of the course, appropriate accommodations that might help facilitate your learning. You will need appropriate documentation from the Office of the Dean of Students. All discussions will remain confidential.

**Academic Integrity**

**General Statement**

Union College recognizes the need to create an environment of mutual trust as part of its educational mission. Responsible participation in an academic community requires respect for and acknowledgement of the thoughts and work of others, whether expressed in the present or in some distant time and place.

Matriculation at the College is taken to signify implicit agreement with the Academic Honor Code, available at honorcode.union.edu. It is each student’s responsibility to ensure that submitted work is his or her own and does not involve any form of academic misconduct. Students are expected to ask their course instructors for clarification regarding, but not limited to, collaboration, citations, and plagiarism. Ignorance is not an excuse for breaching academic integrity.

Students are also required to affix and sign the full Honor Code Affirmation, or the following shortened version, on each item of coursework submitted for grading:

> I affirm that I have carried out my academic endeavors with full academic honesty.

**Specific Guidance for this Course**

In this course, you will learn by doing. If you do not do things for yourself, you will not learn them. Therefore, I expect you to do your own work, and only turn in that which is yours. When you have questions, feel free to talk to me, the help desk students, or even other students in the class. However, do not leave these discussions with just an answer – you need to **understand** how to arrive at the answer.

For **problem sets**:

- **DO** your own work.
- **DO** struggle on your own before seeking help.
- **DO** seek help (after first giving a serious, honest attempt) from Help Desk, your professor, your fellow classmates.
- **DO** help your classmates by having conversations about general strategies.
• DON'T help your classmates by telling them what to write.
• DON'T look at someone else’s proof/algorithms/assignment, except when you are trying to help them.
• DON'T give your answers to anyone else (on paper, electronically, or in any other way).
• DON'T type or write for anyone else.

• DO ask your professor if you are unsure what’s permissible or not.
• DO put the Honor Code Affirmation in a comment at the top of each program file you submit.
• DO explicitly cite all the people (except me or the help desk staff) and other sources you consulted.

For exams, of course, you should work completely alone.

EVALUATION

READING (8%)

Every week there will be assigned readings from the textbook (and other sources), which will be assigned through your account on perusall.com. You should add comments and questions as you read, respond to comments from others, and answer questions posed by others (your professor and your classmates). Your reading will be evaluated based on your level engagement with the text (based on the number and quality of your comments).

SEMINARS (2%)

The CS department has a regular seminar that explores the diverse and rich field of computer science. Our seminar speakers discuss a variety of topics, including computer science research, applying for CS jobs or graduate school, and career and technical skill development. The seminars are frequently presented by visitors from academia and industry as well as alumni. The seminar is typically Thursday during common lunch (12:50-1:45pm). Seminar dates and topics are announced in class and on the CS department mailing lists.

As part of taking an upper-level CSC course (numbered 250 or higher), you are required to attend at least one CS seminar this term and submit a brief written summary. You should submit your summary before the last day of classes.

You are strongly encouraged to attend as many CS seminars as you are able, as they will give you context necessary to proposal and present a strong senior thesis, and prepare for life involving computing after Union – even if your major is not computer science!

CAVEATS

• Students taking more than one upper-level CSC course are required only to attend and summarize a single seminar each term. This exception does not apply to students in CSC 497, 498, or 499 who are independently required to attend and summarize all CS seminars.

• If you belong to a major whose own mandatory seminars conflict with the times of all computer science seminars, you may instead attend those and submit a summary discussing a seminar you attended and noting the scheduling conflict.

QUICK QUIZZES (10%)

Before each class meeting, we’ll have a short quiz, designed to take 5-10 minutes. These quizzes will show up in your account at gradescope.com, and you should complete them before the class meeting times.

30 March 2020
Projects (40%)

There will be 3 – 5 programming projects (3 is more likely than 5, but it depends on how the term goes) in which you will write parts of a compiler for a simplified version of C.

Examinations (40%)

There will be one midterm exam (15%) and a final exam (25%).