

CMSC 152: Introduction to Computer Science II

The University of Chicago, Winter 2012

<http://www.classes.cs.uchicago.edu/archive/2012/winter/15200-1>

Welcome! Computer Science 152 is the second course in the introductory sequence. In this course, we continue our study of programming, data structures and efficiency, now using the C programming language.

Learning a second programming language is a broadening experience: you will find that much is different, but much is the same.

The specific course goals are these:

- to program extensively in an imperative rather than a functional style,
- to become well-acquainted with the C programming language, which is a *lingua franca* among scientists and engineers,
- to learn about the low-level implementation of a wide variety of data structures, including linked lists, queues, stacks and trees,
- to analyze the efficiency of imperative computer programs.

In striving toward these goals, you will become further acquainted with a selection of classic data structures and algorithms.

Instructor Adam Shaw, email: [ams@¹](mailto:ams@cs.uchicago.edu), office: Ryerson 157.

Teaching Assistants Erik Bodzsar, Sneha Popley, Ankan Saha (labs); Josh Grochow, Nedelina Teneva (homework).

Grader Reed Molbak.

See the course website for your TAs' office hours.

Rather than contacting the TAs with questions by email, please use the collective question-and-answer system at <http://piiazza.com>.

¹cs.uchicago.edu

Lectures All lectures are in Ryerson 251. There are two identical sections.

- Section 1: MWF 9:30–10:20.
- Section 2: MWF 11:30–12:20.

The first lecture is on Wednesday, January 4, 2012; the last meeting is on Wednesday, March 7.

Homework There will be homework assignments, roughly weekly.

Labs Students must register for and attend lab each week. There are six lab sections at various times:

Tues 12:00–1:20; Tues 3:00–4:20; Tues 4:30–5:50; Wed 1:30–2:50;
Wed 3:00–4:20; Wed 4:30–5:50.

There will be nine labs. There is no lab the first week, which starts on Tuesday, January 3. The first labs will be held on Tuesday, January 10. Week by week, lab sessions are the same as one another, but you must attend the same session each week to maintain balanced numbers. All labs are in JRL A01C (the MacLab).

Exams There will be two 50-minute midterm exams in class, at the one-third and two-thirds points (roughly), and a final exam. I will announce exact dates as they approach.

The final grade will be computed according to the following formula: homework 20%, labs 20%, midterm I 10%, midterm 2 20%, final exam 30%. I will grade on a curve, so what constitutes an A, B, *etc.* will be determined by the class's collective performance.

Late Policy Late work will not be counted, with the following exception. You have one 24-hour extension on any lab or homework assignment, no questions asked. We will keep track of who has and has not used their extension. To use your extension for a particular piece of work, you must contact the instructor *in advance* of its deadline.

(We will also accept late work in the case of extraordinary circumstances, such as family emergencies. Having a lot of other work to do is not an extraordinary circumstance.)

Text *The C Programming Language (2nd Edition)*, by Brian Kernighan and Dennis Ritchie. (This book is commonly known as *K&R*.) The textbook is available on campus at the Seminary Co-op Bookstore². You can of course find new and used copies at your favorite online bookstore as well.

Software *gcc*, *emacs* and *subversion*.

Schedule of Topics, by Lecture (subject to change)

Week	M	W	F
1	—	Welcome!	tools, overview
2	types, arith., conditionals	assignment, control	pointers
3	—	arrays	allocation
4	strings	Midterm I (TBA)	bits
5	scripting, pipes	structs, typedef	tagged unions
6	lists I	lists II	—
7	sorting I	sorting II	trees I
8	Midterm II (TBA)	<i>special event</i>	trees II
9	graphs I	graphs II	hash tables
10	C++ I	C++ II	—

Honesty In this course, you must, as in every course, adhere to college-wide honesty guidelines as set forth at <http://college.uchicago.edu/policies-regulations/academic-integrity-student-conduct>. The college's rules have the final say in all cases. My own distillation, as it pertains to 152, is as follows:

- Credit your sources.
- Document all collaboration, no matter how small.
- Do not copy.
- Do not allow your work to be copied. – Do not submit work identical to another student's.

If you break any of these rules, you will face serious consequences.

It is acceptable for you to discuss the concepts or strategies of a particular lab or homework assignment with others, but it is not acceptable for you to look at one another's code or write code together. When it comes time to do the actual work, you must do your own, on your own. Talking about coursework in the process of doing it is a form of collaboration, therefore, when you do discuss a homework assignment or lab exercise with another student, include a comment in your code like this:

```
/* I discussed this assignment with Jane Doe. */
```

²5757 S. University Ave., <http://www.semcoop.com>.

If you always do your own work and document all your collaborations, you will always be above board.

If you ever have any questions or concerns about honesty issues, raise them with your instructor, early, so potential problems in academic conduct are nipped in the bud.

Enjoy yourselves! There is a lot to enjoy in this introductory course. To get the most out of it, start your work well ahead of time and seek help when you are stuck. The course is meant to be challenging, but, beyond a certain point, it is not profitable to be stumped. We have lots of ways to get you going again if you find yourself unable to make progress. Take advantage of office hours and online support.