

CMSC 151: Introduction to Computer Science 1

The University of Chicago, Summer 2014

<http://www.classes.cs.uchicago.edu/archive/2014/summer/15100-91>

Welcome! The overarching goal of CS 151 is to introduce students to the subject of computer science by means of an introduction to computer programming. (Computer science and computer programming are not the same thing.)

The more specific course goals are these:

- to design data structures to solve specific computational problems,
- to process those data structures in several ways, most importantly by means of structural recursion,
- to learn to recognize and exploit common computational patterns, and
- to analyze the efficiency of computer programs.

In striving toward these goals, students will become acquainted with a selection of classic data structures and algorithms. We use the Racket programming language as our platform.

Having completed the course, students will know how to use computer programming as a flexible, reliable, efficient and comprehensive method for analytical problem solving. Students will discover, in future work, that the experience gained in this course applies to programming in any language. Furthermore, they will have a wider acquaintance with best practices in the discipline.

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Office hours: Ryerson 176 Tuesday 1-3 PM Thursday 3-5 PM or by appointment

Teaching Assistants Sammi Wreschner, Melissa Grossbarth, Tristan Rasmussen, and Melissa Grossbarth

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

Lectures All lectures are in Ryerson 251. Lecture meets Monday, Wednesday, and Friday from 1:30-3:30pm. Two hours is a long time to sit in one place on a beautiful summer afternoon; I will try to make it bearable by delivering two distinct lectures with an intermediate break, during which I will more or less insist you get up and walk around.

The first meeting is on Monday, June 23; the last meeting is on Friday, July 25.

Labs Each student must attend weekly lab sessions from 4–6pm on Wednesday afternoons. Labs are held in the Computer Science Instruction Lab (CSIL), in the John Crerar Library.

Evaluation Coursework is partitioned into lab exercises, homework assignments, exams and quizzes. There will be 5 labs, 13 homework assignments, 4 quizzes one final exam. The final grade will be computed according to the following formula: homework 20%, labs 15%, quizzes 30%, final exam 35%. I will grade on a curve, so what constitutes an A, B, etc. will be determined by the best marks.

Late Policy Late work will not be accepted. Our time frame is compressed and you must keep up. Exceptions to this policy will be granted only in the case of extraordinary circumstances.

Text The text for the course is *How to Design Programs* by Felleisen *et al.* The full text is available free online (<http://www.htdp.org>) so it is not necessary to purchase a hard copy. If, however, you would like to read the text as an actual book, it is available on campus at the Seminary Co-op Bookstore and on the Internet, new and used, at the usual online bookstores.

Software DrRacket, available at <http://racket-lang.org>, and Subversion, available at <http://subversion.apache.org>.

Advice 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. Ask us for assistance. We have lots of ways to get you going again if you find yourself unable to make progress. Avail yourselves of office hours and online support.

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 paraphrase is as follows:

- Never copy work from any other source and submit it as your own.
- Never allow your work to be copied.
- Never submit work identical to another student's.
- Document all collaboration.
- Cite your sources.

We are absolutely serious about enforcing academic honesty. If you break any of these rules, you will face dire consequences. Please note that sharing your work publicly (such as posting it to the web) definitely breaks the second rule. With respect to the third rule, you may discuss the general strategy of how to solve a particular problem with another student (in which case, you should document it per the second rule), but you may not share your work directly, and when it comes time to sit down and type, you must do the work yourself. If you ever have any questions or concerns about honesty issues, raise them with your instructor, early.

Acknowledgements A great deal of material I use in teaching this course is thanks to previous instructors of this course (and in particular Adam Shaw) who have graciously made their materials available to me.