CMSC 15100 Introduction to Computer Science I
Syllabus, Summer 2020

Welcome to 15100 (informally called "151")! This course will be a rapid introduction to the principles of computer science. We will learn how to set up problems in a computational way, how to express solutions to those problems as computer programs, and how to design efficient, correct, and readable programs as code. The problems we consider will start simple, but by the end of the course we will have developed the skills to write powerful and moderately complex pieces of code as we tackle harder problems and see a few of the many applications of computer science.

Programming will be done in the Racket programming language. We will become familiar with the Dr-Racket programming environment, which is available online: `https://racket-lang.org/` Material will be loosely drawn from the textbook "How to Design Programs" by Matthias Felleisen, Robert Bruce Findler, Matthew Flatt, and Shriram Krishnamurthi. Students are not required to purchase the textbook. The textbook is also freely available on the web: `http://www.htdp.org/`

1   Staff

Instructor:	Aritra Sen
Email address:	aritrasen@uchicago.edu
Physical address:	Crerar 287
Office hours:	Tue Thu 11-12 pm using Zoom
Graders: (available on Piazza and Canvas)	

Most course content will be available on the Canvas page for the course, which you already should be enrolled in at `canvas.uchicago.edu`. The classes will be held during regular class hours using zoom but they will be recorded.

There is also a Piazza page set up for the course. Piazza is a question-and-answer website that we will use as a common location to ask questions about Racket and programming, discuss interesting things covered in lecture, and more. Programming is hard, but you don't have to do it alone. To get your questions answered, come to office hours, ask on Piazza, or send an email to the instructor.

We have several graders for this course. If you have a question on the grading of an assignment, send an email to the instructor with a detailed description.

If you aren't able to access the Canvas page or the Piazza page, please contact the instructor.

2   Schedule

Lecture:	Mon Wed Fri 1:30-3:30pm
Room: Using Zoom	

Lab: Asynchronous	
Room: NA	

Week	Date	Topic
1	6/22	Numbers, data, functions
	6/24	Recursive functions
	6/26	Structures
2	6/29	Lists and inductive structures
	7/1	Trees, polymorphism
	7/3	Higher-order functions
3	7/6	Take home Midterm exam
	7/8	Anonymous functions
	7/10	Sorting and algorithmic analysis
4	7/13	Vectors
	7/15	Binary Search Trees
	7/17	Graphs
5	7/20	DFS
	7/22	Tree traversal and min-max
	7/24	Take Final exam

3 Homework and Grading

There will be homework assignments after each lecture, due immediately before the start of the next lecture. The assignments will be released at the beginning of every week.

Homework is the heart of your learning for the course – most homework will require you to write Racket code. Homework will be found on Canvas, and when you're finished, you should submit it on Canvas.

Your grade will be calculated using the following breakdown:

- 50% homeworks
- 20% Take home Midterm exam (open book)
- 25% Take home Final exam (open book)
- 5% labs

4 Labs

Each week, there will be a lab session. This will be similar to homework. You don't need to submit lab assignments but make sure you know to solve those problems. You will be tested on those in your homework. The only way to learn how to program is to do programming!

5 Academic Honesty and Collaboration Policy

There is no tolerance for copying other students' code or work; in escalating levels of severity, any instances of plagiarism could result in a zero on the assignment, a failing grade in the course, or suspension from

the university. In general, we will follow the University guidelines for academic honesty, found at `http://college.uchicago.edu/advising/academic-integrity-student-conduct`. Summarized briefly:

- Never copy work from any other source and submit it as your own.

- Never allow your work to copied.

- Never submit work identical to another student's.

- Document all collaboration.

- Cite your sources.

- Never write anything in your homework which you can not explain to your instructors.

All that being said, it's highly encouraged for you to work on homework with your classmates. At the top of your homework submission, you should list all people you spoke with about this assignment.

6 Attendance Policy

Pre-college students (academically advanced high school students taking Summer Session courses) are required to attend all class sessions. If a pre-college student is absent, your instructor will contact the University of Chicago Summer Session office within a half-hour of class starting so that they can attempt to locate the student as soon as possible.

Every student who attends this course must be officially registered. Auditing or sitting in is not permitted during summer quarter.

7 Disability Statement

If you have any kind of disability, please talk to the instructor or TA immediately. We are more than happy to provide any kind of accommodation that will help you succeed in this class. If you require any accommodations for this course, as soon as possible please provide us with a copy of your Accommodation Determination Letter (provided to you by the Student Disability Services office) so that you may discuss with us how your accommodations may be implemented in this course. The University of Chicago is committed to ensuring the full participation of all students in its programs. If you have a documented disability and, as a result, need a reasonable accommodation to participate in class, complete course requirements, or benefit from the University's programs or services, you are encouraged to contact Student Disability Services as soon as possible. To receive reasonable accommodation, you must be appropriately registered with Student Disability Services. Please contact the office at 773-702-6000 or email: disabilities@uchicago.edu or visit the website at disabilities.uchicago.edu.