

Overview

This sheet summarizes information for the course CSC 263 H1 (*Data Structures and Analysis*) during the Fall term of 2015 (September–December) on the St. George campus. **Please consult the course website for full details.**

Website

<http://www.cs.toronto.edu/~toni/Courses/263-2015>

You are responsible for reading all announcements on the Piazza forum linked from the course website. Make a habit of checking it at least weekly.

Textbook

- Cormen, Lieserson, Rivest & Stein: *Introduction to Algorithms* 3rd ed., © 2009 MIT Press, ISBN: 978-0-262-03384-8.
- See the course website for additional references, lecture outlines and a free online edition of the textbook (provided by the U of T Libraries).

Contact

Instructor	Email	Office	Office Hours*
Toniann Pitassi	toni@cs.toronto.edu	SF 2305A	W 12:15–1:45

*outside these hours, please make an appointment

Section	Lectures	Room	Tutorials	<i>Tutorials are in the same room as the lecture room</i>
L0101	W 10-12	RW 117	F 10-11	
L2001	W 10-12	RW 117	F 10-11	
L2003	W 10-12	RW 117	F 10-11	
L0201	W 2-4	WI 1016	F 1-2	
L2000	W 2-4	WI 1016	F 1-2	
L2201	W 2-4	WI 1016	F 1-2	

Schedule

Week	Dates	Due	Worth	Lecture Topics [Text Chapters]	Notes
1	Sept 15–Sept 18			Complexity Review; ADTs [1–4]	
2	Sept 21–Sept 25			Priority Queues; Heaps [6]	add date (Sept 27)
3	Sept 28–Oct 2	Assignment 1	8%	Dictionaries; BSTs [12.1–12.3]	
4	Oct 5–Oct 9			Balanced Trees; Augmenting [14]	
5	Oct 12–Oct 16	Assignment 2	8%	Hashing [11]	
6	Oct 19–Oct 23	Midterm	20%	Randomization; Quicksort [5, 7]	
7	Oct 26–Oct 30			Amortization; Dynamic Arrays [17]	
8	Nov 02–Nov 06	Assignment 3	8%	Graphs; Breadth-First Search [22]	drop date (Nov 08)
9	Nov 09–Nov 13			Depth-First Search [22]	
10	Nov 16–Nov 20	Assignment 4	8%	Minimum Spanning Trees [23]	
11	Nov 23–Nov 27			Disjoint Sets [21]	
12	Nov 30–Dec 02	Assignment 5	8%	Lower Bounds [8.1, 9.1]	
	Dec 11–Dec 22	Final Exam	40%		

Learning Goals

By the end of this course, students will be familiar with a variety of standard, complex data structures and abstract data types (graphs, dictionaries, balanced search trees, hash tables, heaps, disjoint sets), and with standard complexity measures (worst-case, average-case, amortized). More specifically, students will be able to:

- recognize algorithms that employ each data structure,
- write algorithms that employ each data structure,
- recognize when each complexity measure is most appropriate,
- analyze the efficiency of algorithms using each complexity measure,
- choose and/or modify data structures appropriately to solve various problems.

Grading
Scheme

- Each assignment should be completed in groups of up to **four** students (to help you learn better) and is due by 5:59pm on Tuesday. See details on the course website.
- Late assignment submissions: You will be given 4 grace tokens each worth 6 hours of lateness. You may use them however you wish. That is, you may use any number of tokens on each assignment (1 token=6 hours of lateness, 2 tokens=12 hours of lateness, 3 tokens=18 hours of lateness, 4 tokens=24 hours of lateness), subject to having the tokens available. Thus you have 24 hours in total of lateness that you may use at your discretion, to be used in 6 hour units. Note that if you complete your assignment in a group, everyone in the group must use up their tokens on a late submission.
- **The midterm test is scheduled at 8–9pm on Oct. 22, in EX 100 with alternate sitting at 9–10pm on Oct. 22.** Further details will be posted on the course website, including what to do if you are unavailable at the regular time.
- If you earn less than 40% on the final exam, your final course grade will be reduced below 50.

20% Rule

If you cannot answer a question (or part of a question) on a test or on the final exam, you will receive 20% of the marks for that question (or part) if you leave your answer **completely blank**. **This does NOT apply on homework**, where you have the time (and the responsibility) to ask questions and learn how to solve each problem.

Petitions

If you are unable to complete homework or if you miss a test due to major illness or other circumstances completely outside of your control, please **contact your instructor immediately**. Special consideration will be considered on an individual basis and will *not* be given automatically. In other words, you risk getting a mark of zero for missed work unless you contact your instructor *promptly*. In the case of illness, medical documentation must be supplied on the official University of Toronto *Verification of Illness or Injury Form*.

Remarking

All remarking requests must be received within **one week** of the date when the work was *returned*. It is your responsibility to check course announcements regularly (for work returned electronically) and to pick up your work in lecture, tutorial, or during office hours (for work returned on paper). It is to your advantage to be specific when you write up your request: either clearly demonstrate that the marking scheme was not followed correctly, or ask questions about specific elements in the marking scheme. Note that marks are awarded based on *merit*, not on need.

Collaboration

Everything that you submit for marks (problem sets, assignments, test and exam) must not contain anyone else's work or ideas without proper attribution. In particular, the writeup of your homework must be done in isolation from other students (or other groups) and without copying from notes or other sources. This ensures that your solution is truly your own, and that your grade reflects your own understanding of the course material. *To be safe, do not let others look at your solutions, even in draft form and even after the due date.* Please read the *Guidelines for Avoiding Plagiarism* on the course website.

Netiquette

Please use email for personal matters only; post all other questions/comments on the course forum. *Please use a descriptive subject line* for all your electronic correspondence—for email, *always include the course number*. To help prevent your messages being incorrectly tagged as spam, please email only from your CDF or UTOReil account (see www.utorid.utoronto.ca). We will generally answer queries within two business days (not counting weekends), although we may take longer during particularly busy times (around assignment due dates). For your own sake, please do not rely on getting same-day answers (which we cannot guarantee, unfortunately).