

CSC 265

CSC 265 – Enriched Data Structures

Fall 2013

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Contact information and meeting times

Instructor: Toniann Pitassi

Office hours: Mon 12-1, or by appointment

Office: SF 2305A

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Lecture/tutorial time and location: Lecture Monday 10-12, BA 3116;
Tutorial Thursday 11-12, BA 2155

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Course content

Course goals: *Data structures* are ways of organising the data involved in computation, suitable for representation in and manipulation by computers. *Algorithms* are precisely stated, general problem solving methods. Data structures and algorithms are central to computer science. They are also integrally related: neither can be studied fruitfully without knowledge of the other.

This course has two goals: *First*, to survey several important data structures and algorithms; and *second*, to introduce the basic tools and techniques for the analysis of algorithms and data structures.

Required Text: Cormen, Leiserson, Rivest, and Stein. *Introduction to Algorithms, 2nd edition*. MIT press and McGraw-Hill, 2001.

Online access to this text is available free to U of T students through the library website: <http://main.library.utoronto.ca/eir/resources.cfm>

The **3rd edition** is available at this website: http://en.tjcities.com/wp-content/uploads/Books/Algorithms_3rd.pdf

Tentative weekly schedule: To view the tentative weekly schedule click [here](#) .

Calendar of important course-related events:

Date

Event

Mon, Sept 9

First day of class

Mon, Sept 16

Assignment 1 out

Mon, Sept 30

Assignment 1 due and Assignment 2 out

Mon, Oct 14

Canadian Thanksgiving (no class)

Mon, Oct 21

Assignment 2 due

Mon, Oct 28

Midterm Exam, Assignment 3 out

Mon, Nov 4

Last day to drop F courses

Mon-Tues Nov 11-12

No class (Fall break)

Thurs, Nov 14

Assignment 3 due, Assignment 4 out

Thurs, Nov 28

Assignment 4 due

Mon, Dec 2

Last lecture

Final Examination Period

Final Exam

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Course policies

Course evaluation: There will be four homeworks, a midterm exam and a final exam. The relative weights of these components towards the final mark are shown in the table below:

Homework	50% (12.5% each)
Midterm	15%
Final	35%

Important note: A mark of at least 35% on the final exam is required to pass the course. Repeated differently: If you receive less than 35% on the final exam, you automatically fail the course, regardless of how well you have done on homeworks or the midterm exam.

Prerequisites: CSC240H1 or at least an A- in CSC236H1/CSC238H1; STA247H1/STA255H1/STA257H1

Homework marking: For each homework assignment, solutions will be made available.

Late homework policy: No late homeworks will be accepted. If you miss a homework deadline because of a medical or personal emergency, you must fill out the [Special Consideration Form](#) . (In case of a medical emergency, you must also submit the [U of T Student Medical Certificate](#) , completed and signed by your physician.) If we judge your reason for missing the deadline to be valid, we will use the average mark you achieved in other homeworks as your mark for the missed homework.

Homework collaboration policy: Students often learn a lot from working with one another. You are encouraged to meet with other students from class for this purpose. For example, you might work through exercises in the course text together or discuss any material you found confusing in lecture or in the text.

It is a good idea to get contact information (email address and telephone number) of at least two other students in the class. That way, if they miss a lecture, you can tell them important information and give them a copy of your lecture notes. They can return the favour if you miss a lecture.

In terms of assignment problems, you may work with zero, or one or two other students who are currently taking the class. If you choose to work in a group (of up to 3 students in total), please submit only one copy of your assignment, with all of your names and student numbers on each page. Assignments must be written up using only the text and your own notes as aids. The point is that your written report should be your own work. Do not let other students outside your group even look at your completed assignment solutions, since this can lead to copying. These rules are meant to ensure that all students understand their solutions to the problems well enough to write up solutions by themselves. Failure to comply with these guidelines is a serious academic offense.

You may not consult any material except the course textbook and your course notes. Note that finding (or copying) the solution to a homework problem on the web does not demonstrate your understanding of course material and, hence, will receive no credit.

Remarking policy: If your request concerns a simple addition error, see the instructor. To make any other kind of remarking request, you must fill [this form](#), attach it to your homework assignment or test, and give it to the instructor of the course no later than one week from the date the marked assignment or test was made available to the class. Remarking requests made after this deadline will not be accepted.

Missed midterm test policy: If you miss the midterm test due to a medical or other serious emergency, get in touch with your instructor immediately, and fill out the [Special Consideration Form](#). (In case of a medical emergency, you must also submit the [U of T Student Medical Certificate](#), completed and signed by your physician.) There will be no make-up test, but if we consider your reason for missing the test to be valid, we will use your final examination mark to compute your mark for the missed midterm test.

Attendance in tutorials: Attendance in tutorials is as mandatory as attendance in lectures. Formal records of attendance will not be taken. However, there will be material that is presented only in tutorial and not discussed in the lectures for which you are responsible and in which you may be tested in homeworks or exams.

Accessibility: The University of Toronto is committed to accessibility. If you require accommodations or have any accessibility concerns, please visit <http://studentlife.utoronto.ca/accessibility> or talk to one of the course

professors as soon as possible.

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Announcements

In this space we will post announcements related to the course. Please check this space at least weekly.

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Handouts

In this space we will make available postscript or PDF versions of course material, including homeworks and solutions (posted after the due date, naturally).

To view postscript handouts you will need access to a postscript previewer. If your machine does not have the required software, you can allegedly download it for free by following [this link](#).

- [Preliminaries, Chapter 1](#)
- [Time Complexity Analysis of an Algorithm, Notes](#)
- [Asymptotic Notation, Notes](#)
- [Binomial Heaps](#)
- [Homework 1, Due Sept 30](#)
- [Tutorial Notes \(Check Weekly!\)](#)
- [Handwritten Notes on Red-Black and 234 Trees](#)
- [Homework 2, Due Oct 21](#)
- [Cuckoo Hashing](#)
- [Perfect hashing](#)
- [Homework 1 Solutions](#)
- [Notes on Hashing](#)
- [Homework 2 Solutions](#)
- [Homework 3, Due Nov 14](#)
- [Grading Scheme for Problem 4 of Midterm](#)

- [Clarification on Question 3, Homework 3](#)
- [Homework 4, Due Nov 28](#)
- [Homework 3 Solutions](#)
- [SHORT VIDEO I: Introduction to Lower Bounds and Comparison Trees \(Prof. Faith Ellen\)](#)
- [SHORT VIDEO II: Information Theory Lower Bounds \(Prof. Faith Ellen\)](#)
- [SHORT VIDEO III: Adversary Argument Lower Bounds \(Prof. Faith Ellen\)](#)
- [SHORT VIDEO IV: Lower Bounds via Reductions \(Prof. Faith Ellen\)](#)
- [Optional Extra Credit Problems](#)
- [Practice Problems for Final Exam](#)
- [HW4, Part I Solutions](#)
- [HW4, Part I Comments/Grading Scheme](#)

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