

This sheet summarizes information for the course CSC 373 H1Y (“Algorithm Design & Analysis”) during the Summer term of 2012 on the St. George campus at the University of Toronto. Please consult the course website for full details about all the information, rules and policies summarized on this sheet.

Website

Website: <http://www.cs.toronto.edu/~siavosh/csc373h/>

The website will always contain the most up-to-date information regarding the course. *You are responsible for all announcements posted on the course website*; please check it at least weekly.

Instructor

Instructor	Office	Phone	Email
Siavosh Benabbas	SF 4306A	416-978-4236	<a href="mailto:csc373@cs.toronto.edu">csc373@cs.toronto.edu</a>

**Office Hours (TENTATIVE):** Tuesdays and Thursdays 4:30-5:30

Textbooks

**Required:** Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest & Clifford Stein: *Introduction to Algorithms, 3rd edition*. Copyright 2009, MIT Press ISBN: 978-0-262-03384-8. (Used for readings and exercises throughout the term.)

The 2nd version of the book is available online as an “electronic resource” for UofT students at: <http://go.utlib.ca/cat/4795293>

**Recommended:** Sanjoy Dasgupta, Christos H. Papadimitriou & Umesh Vazirani: *Algorithms*. Copyright 2006 McGraw-Hill Higher Education, ISBN: 978-0-07-352340-8.

Grading Scheme

- Three assignments due on June 5th, July 3rd, July 24th *before the start* of class (no later than 6:10PM), worth 4% each. (details are on the course website).
- Three term tests on June 12th, July 10th, July 31st during the class, worth 45% in total. *Closed-book*. Each Term Test will be very similar to the the assignment preceeding it. Make sure you understand the solution to the assignment before the term test.  
To help you out in case you do particularly poorly on one of the term tests the total marks of the test tests will be distributed as follows: The term test you do worst at will be worth 9%, the other two will each have 18%.

- Two programming assignments due on July 5th, August 9th. Each assignment should be submitted using cslab’s facilities. See the section below. worth 4% each.
- One final exam, during exam period (Aug 14–17) worth 35%. *One HANDWRITTEN (lettersized) aid sheet allowed*.

- Late exercises or assignments will *not* be accepted, except if you type your assignment and submit a PDF file using cslab before the start of the next class. In other words you will get 2 free grace days if you type up and submit a PDF file on cslab. You will *not* get these grace days for a scanned assignment!

The recommended way of typesetting your assignments is using L<sup>A</sup>T<sub>E</sub>X. There is going to be a template L<sup>A</sup>T<sub>E</sub>Xfile uploaded to the course webpage for each assignment.

- answering “I don’t know” (and nothing else) is worth 20%, to encourage awareness of (and honesty about) your level of understanding.

If you leave the question completely blank (forget to write “I don’t know”) you will only get 10%.

Email Policy

Please use a descriptive subject line. It might help send your emails from your CDF or UTORmail account to prevent your messages being incorrectly tagged as spam. Also try avoiding HTML emails. We will try to answer queries within three business days although we may take longer during particularly busy times (*e.g.*, around assignment due dates). You can *not* expect to get an answer the same day specially on assignment due dates.

**Programming  
Assignments**

Each programming assignment will describe an algorithmic task to be solved, the precise format of input and output and an allowed runtime. Any submission that:

- does not compile,
- produces a runtime error,
- does not adhere to the precise input/output format,

will not get any marks. Marks are earned based on passing (producing correct answer for) 20 test cases.

For each test case that your program produces the correct output in the allocated runtime you get 5% of the assignment's mark. You are free to write your answers in Python, Java, or C/C++ but be warned that Python programs might be at a disadvantage in terms of speed.

The runtime limit of the problem is there to test if you have implemented the fastest algorithm for the problem and is designed to be tight. A suboptimal algorithm, or a particularly poor implementation is not supposed to pass all the tests. (But if you can't figure out or implement the fastest algorithm feel free to submit a slower implementation; you will get the marks from the easier test cases.)

**Academic  
Offences**

**The work you hand in (assignments, tests, and exam) must not contain anyone else's work or ideas without proper attribution.** In particular, the actual writeup of your exercises and assignments must be done in isolation from other students (for individual work) or groups (for group work) 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 links on the course website.

**Accessibility  
Services**

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or Accessibility Services at (416) 978-8060; [accessibility.utoronto.ca](http://accessibility.utoronto.ca)

Course  
Outline

- May 15th** Course Intro.
- May 17th** Greedy Algorithms.
- May 22nd** Greedy Algorithms.
- May 24th** Greedy Algorithms.
- May 29th** Dynamic Programming.
- May 31st** Dynamic Programming.
- June 5th** Dynamic Programming. *Assignment 1 due.*
- June 7th** Dynamic Programming.
- June 12th** Dynamic Programming. *Term Test 1.*
- June 14th** Dynamic Programming.
- June 19th** Network Flow.
- June 21st** Network Flow.
- June 26th** Reading week: No class.
- June 28th** Reading week: No class.
- July 3rd** Network Flow. *Assignment 2 due.*
- July 5th** Network Flow. *Programming Assignment 1 due.*
- July 10nd** Linear Programming. *Term Test 2.*
- July 12th** Linear Programming.
- July 17th** NP-Completeness.
- July 19st** NP-Completeness.
- July 22nd** *Last day to drop the course from academic record and GPA.*
- July 24th** NP-Completeness. *Assignment 3 due.*
- July 26st** NP-Completeness.
- July 31st** NP-Completeness. *Term Test3.*
- August 2nd** NP-Completeness.
- August 7th** Backtracking.
- August 9th** More approximation algorithms. *Programming Assignment 2 due.*

Special thanks to François Pitt and Kaveh Ghasemloo for sharing their templates for various course related documents.