

Overview

This sheet summarizes information for the course CSC 373 H1F (*Algorithm Design, Analysis, and Complexity*) during the Fall term of 2014 on the St. George campus. **Please consult the course website for full details.**

Website

<https://piazza.com/utoronto.ca/fall2014/csc373h1/home>

You are responsible for reading all announcements on the course website; please check 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

Section	Instructor	Email	Phone	Office	Office Hours*
L0101	François Pitt	fpitt@cs.utoronto.ca	416-978-3707	BA 4264	TR 2-4
L5101	Stephen Cook	sacook@cs.utoronto.ca	416-978-5183	SF 2303C	TR 5

*outside these hours, please make an appointment

Section	Lectures (Room)	Tutorials (Rooms)
L0101	MWF 10 (BA 1200)	R 2 (<i>to be announced on course website</i>)
L5101	W 6-9 (BA 1200)	R 6 (<i>to be announced on course website</i>)

Schedule

Week	Dates	Due	Worth	Lecture Topics [Text Chapters]	Notes
1	Sep 08 – Sep 14			Greedy Algorithms [16, 23–25]	
2	Sep 15 – Sep 21	Prob. Set 1	2%	Greedy Algorithms [16, 23–25]	add date (Sep 21)
3	Sep 22 – Sep 28	Prob. Set 2	2%	Dynamic Programming [15, 25]	
4	Sep 29 – Oct 05	Prob. Set 3	2%	Dynamic Programming [15, 25]	
5	Oct 06 – Oct 12	Prob. Set 4	2%	Network Flow [26]	
6	Oct 14 – Oct 19	Assign. 1	12%	Linear Programming [29]	Thanksgiving (Oct 13)
7	Oct 20 – Oct 26	Midterm	15%	Linear Programming [29]	
8	Oct 27 – Nov 02	Prob. Set 5	2%	<i>P/NP</i> , <i>NP</i> -completeness [34]	
9	Nov 03 – Nov 09	Prob. Set 6	2%	<i>NP</i> -completeness [34]	drop date (Nov 03)
10	Nov 10 – Nov 16	Prob. Set 7	2%	Self-Reducibility [34]	
11	Nov 19 – Nov 25	Prob. Set 8	2%	Approximations [35]	Fall break (Nov 17–18)
12	Nov 26 – Dec 02	Assign. 2	12%	Approximations [35]	
	Dec 08 – Dec 19	Final Exam	45%		

Grading Scheme

- Each problem set must be completed individually (to help you cement your own understanding) and is due **by 9:59pm on Monday**.
- Each assignment should be completed in groups of up to four students (to help you learn better) and is due **by 9:59pm on Tuesday**—see details on the course website.
- Late homework submissions are penalized by 1.5% for every *hour* of lateness (rounded up, to a maximum of 36 hours), except for documented unusual circumstances—see the policy on special consideration (“petitions”) below.
- The exact date, time, and room for the midterm test will be posted on the course website.
- For the midterm test, you will be allowed *one* 8.5" × 11" *aid sheet*, **handwritten on one side**.
- For the final exam, you will be allowed *one* 8.5" × 11" *aid sheet*, **handwritten on both sides**.
- If you earn less than 40% on the final exam, your final course grade will be reduced below 50.

Learning Goals

By the end of this course, students will be familiar with standard algorithm design techniques (greedy strategies, dynamic programming, network flow and linear programming, approximations), and understand the importance of computational complexity. More specifically, students will be able to:

- recognize algorithms that employ each technique,
- write algorithms that employ each technique,
- prove the correctness of algorithms that employ each technique,
- analyze the efficiency of algorithms that employ each technique,
- demonstrate membership in P and NP ,
- show NP -completeness.

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* (see the course website for a link to this document). If you have any concerns or questions regarding your situation, please contact your instructor or your College Registrar—they are well-equipped to help you with anything you may be going through.

Remarking

All remarking requests must be received within **two weeks** 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—that is the only fair way to award marks—so statements like “I worked really hard” or “I really need those marks” are not good reasons, unfortunately.

If you are unsure whether or not your work was marked correctly but you have not necessarily found an actual error in the marking, please speak with your instructor.

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 UTORmail 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 (e.g., around assignment due dates). For your own sake, please do not rely on getting same-day answers (which we cannot guarantee, unfortunately).

10% Rule

If you cannot answer a question (or part of a question) on a test or on the final exam, you will receive 10% 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.