

CSC373: Algorithm Design, Analysis & Complexity, Fall 2017

Instructors: Rabia Bakhteri and Allan Borodin

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(with some occasional guest lectures by Nisarg Shah)

Website: <http://www.cs.toronto.edu/~bor/373f17/index.html>

Lectures (day time section): M,W 10:00-11:00 LM161, F 10:00-11:00 WI 1061

Tutorials (day time section): Thur 2:00-3:00, LM161, BA2155, BA2165, BA2195

Lectures (evening section): Wednesday 6PM-9PM, BA1190

Tutorials (evening section): Thur 5:00-6:00, BA1190, BA 2139, BA2145, WB 144

Borodin Office Hours: Wednesdays, 4:15-5:15, Sandford Fleming, SF2303B,
or by appointment

Course Description (from the Calendar)

Standard algorithm design techniques: divide-and-conquer, greedy strategies, dynamic programming, linear programming, randomization, network flows, approximation algorithms. Brief introduction to NP-completeness: polynomial time reductions, examples of various NP-complete problems, self-reducibility. Additional topics may include approximation and randomized algorithms. Students will be expected to show good design principles and adequate skills at reasoning about the correctness and complexity of algorithms.

Texts

Required: T. H. Cormen; C. E. Leiserson; R. L. Rivest; C. Stein
Introduction to Algorithms, 3rd Edition, 2009.

Available online from the University of Toronto library.

Not required: S. Dasgupta; C. H. Papadimitriou; U. Vazirani
Algorithms, 2006.

A text we have often used J. Kleinberg; E. Tardos, **Algorithm Design**, 2005.

See also <http://www.cs.princeton.edu/wayne/kleinberg-tardos/pearson/>

Grading Scheme

Assignments: 3 worth 5% each
Term tests: 2 worth 20% each
Final (3 hours): worth 45%

See the course website for dates and deadlines. Term tests will be held during tutorial slots.

The 20% rule: you will receive 20% of the points for any (sub)problem for which you write “I do not know how to answer this question.” You will receive 10% if you leave a question blank. If instead you submit irrelevant or erroneous answers you will receive 0 points. You may receive partial credit for the work that is clearly “on the right track.” The 20% rule applies to all term work: assignments, term tests, and even the final.

Assignment Policy

Assignments will be submitted electronically on MarkUs (instructions will follow later). Late assignments will not be accepted.

Collaboration Policy and Academic Integrity

You are allowed to discuss assignment questions with other students. You are allowed to consult additional materials, e.g., books, papers, websites. Nonetheless, the writeup of your solutions should be your own and should be done in isolation from other students and resources. In addition, you must clearly identify the names of students you collaborated with (if any) and provide a clear description of additional materials you consulted (if any).

The following rule of thumb might help you ensure that you are writing down your own understanding of a solution: (1) do not take notes during discussions with other students, (2) after solving a question, take a one-hour break before writing down the solution, (3) while writing down the solution do not consult any materials.

Copying or allowing other students to copy solutions is a serious academic offense and will be reported. You might find the Arts and Science website on academic honesty (and references therein) helpful: <http://www.artsci.utoronto.ca/newstudents/transition/academic/plagiarism>.

Email Policy

I read email regularly, but I do NOT promise to reply to all emails. In particular, if your question is of general interest, I will not respond to it via email. Instead, I will address your question during the following lecture, so that everyone can benefit. Similarly, if your question requires a technical answer it is better to ask it during a lecture, or a tutorial, or office hours.

Accessibility

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; <http://accessibility.utoronto.ca/>.

Important Resource

The course website is considered a required reading for this course. Assignments, deadlines, important dates, and other announcements will be posted on the website throughout this course. You are responsible for checking the website regularly.