

**DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES
UNIVERSITY OF TORONTO MISSISSAUGA**

**CSC373H5F LEC0101
Algorithm Design and Analysis
Course Outline - Fall 2012**

Class Location & Time Mon, 10:00 AM - 12:00 PM IB 200
Instructor Mario Ventresca
Office Location CCT 3073
Office Hours Monday 1:00-2:30
Telephone NA
E-mail Address mario.ventresca@utoronto.ca
Course Web Site [blackboard](#)

Teaching Assistant Chen Chen
Office Location NA
Office Hours NA
Telephone NA
E-mail Address chen@msrg.utoronto.ca

Course Description

Standard algorithm design techniques: divide-and-conquer, greedy strategies, dynamic programming, linear programming, randomization, network flows, approximation algorithms and others (if time permits). Students will be expected to show good design principles and adequate skills at reasoning about the correctness and complexity of algorithms. [24L, 12T]

Prerequisite: CSC263H5/378H5, 290H5

Exclusion: CSC375H1, 364H5 (SCI)

Distribution Requirement: SCI

Students who lack a pre/co-requisite can be removed at any time unless received explicit waiver from department.

Textbooks and Other Materials

Textbook: "Algorithm Design" by J. Kleinberg and E. Tardos, Addison-Wesley, 2005.

Assessment and Deadlines

Type	Description	Due Date	Weight
Assignment	1	2012-09-17	3%
Assignment	2	2012-09-24	3%
Assignment	3	2012-10-01	3%
Assignment	4 (due in tutorial)	2012-10-11	3%
Assignment	5	2012-10-22	3%
Term Test	in tutorial	2012-11-01	15%
Assignment	6	2012-11-05	3%

Assignment	7	2012-11-12	3%
Assignment	8	2012-11-19	3%
Assignment	9	2012-11-26	3%
Assignment	10	2012-12-03	3%
Quiz	pop quiz - 1		5%
Quiz	pop quiz - 2		5%
Quiz	pop quiz - 3		5%
Quiz	pop quiz - 4		5%
Final Exam		TBA	35%
Total			100%

More Details for Assessment and Deadlines

Assignments:

1. Assignments (weekly) will be composed of 2-5 questions from the textbook and are due at the START of lecture, unless otherwise noted.
2. Solutions must be presented clearly and legibly, we encourage you to use Latex (not Word), but this is not required.
3. For any algorithm you are asked to write, you **MUST ALWAYS** give a correctness proof. The proof doesn't need to be extremely formal, but it must be very clearly explained and convincing.
4. Please keep your solutions *short* and *to the point*. Brevity is a beautiful thing, and often said to be a key to good computer science. This doesn't mean to leave out details -- it means to think about what you are writing, use appropriate comments/math/etc to write a concise and correct explanation/proof/etc.
5. Your proofs should be **CRYSTAL CLEAR**. **We WILL NOT TRY to figure out why or how leaps of logic are true, even if they are.** If you do not understand a step, it is better to be honest than to try to fake your way through - seek help **IMMEDIATELY** if you need it!! Use figures if they help your explanations, and be careful when using pseudocode that it is also **CRYSTAL CLEAR** with sufficient comments.
6. When handing in assignments, your solutions **MUST** be stapled with a signed cover sheet (on blackboard) or it **WILL NOT BE MARKED**.

Quizzes will be randomly done throughout the year and may take place anytime during lecture or tutorial.

Penalties for Lateness

Late assignments are not accepted. Missed quizzes cannot be taken at a later date.

Procedures and Rules

Missed Term Work

To request special consideration, bring supporting documentation to the instructor in person during office hours at least one week in advance.

In case of illness, bring a U of T medical certificate to the instructor within one week of the missed work. The certificate must specify the exact period during which you were unable to carry out your academic work.

Missed Final Exam

Students who cannot write a final examination due to illness or other serious causes must file an [online petition](#) **within 72 hours of the missed examination**. Original supporting documentation must also be submitted to the Office of the Registrar **within 72 hours of the missed exam**. Late petitions will **NOT** be considered. If illness is cited as the reason for a deferred exam request, a U of T Medical Certificate must show that you were **examined and diagnosed at the time of illness and on the date of the exam, or by the day after at the latest**. Students must also record their absence on ROSI on the day of the missed exam or by the day after at the latest. Upon approval of a deferred exam request, a non-refundable fee of \$70 is required for each examination approved.

Academic Integrity

Honesty and fairness are fundamental to the University of Toronto's mission. Plagiarism is a form of academic fraud and is treated very seriously. The work that you submit must be your own and cannot contain anyone else's work or ideas without proper attribution. You are expected to read the handout How not to plagiarize (<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>) and to be familiar with the Code of behaviour on academic matters, which is linked from the UTM calendar under the link Codes and policies.

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Final Exam Information

Duration: 3 hours
Aids Permitted: None

Additional Information

The course will cover the bulk of the textbook (chapters 1, 4-13), going through a chapter per week (approximately). Material for Chapters 2 and 3 is review and will not be covered in class, but it is expected all students are very familiar with all topics in these chapters. It is your responsibility to read these chapters immediately.

Questions any students may have should be posted to the blackboard forum where either the TA or Instructor will respond as soon as they can. This is the quickest way to get a response, so don't be shy! Otherwise, you are free to consult with the TA during tutorial or during the Instructor's office hours.

Last Date to drop course from Academic Record and GPA is November 5, 2012.