CSC363 - Computational Complexity and Computability
Summer 2007

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Lectures: Tuesdays, 6-8pm, in GB 119

Tutorials: Tuesdays, 8-9pm, in GB 119

Office Hours: Thursdays, 5-6pm in SF 4302-F, or by appointment.

Website: http://www.cs.toronto.edu/~matei/363s07/. Refer to this site periodically.

Textbook: M. Sipser. Introduction to the Theory of Computation. Thomson Course Technology, 2005. This is the main book I will be following. We will be interested in chapters 3, 4, 5, 7 and 8.


Cormen, Leiserson, Rivest and Stein. Introduction to algorithms (second edition). McGraw-Hill, 2001. This book is mainly concerned with algorithms, and some other courses may be based on it. For our purposes, chapters 34 and 35 are relevant.

Course Contents:
Computability Theory (6 weeks): Turning machines, Church’s thesis, decidability and semi-decidability, diagonal arguments, the Halting Problem and other undecidable problems, reductions.
Computational Complexity (7 weeks): The classes P and NP, polynomial time reducibility, NP-completeness, Cook-Levin theorem, various NP-complete problems, space bounded computation.

Marking Scheme:
4 assignments worth 10% each, due on June 5th, June 19th, July 17th and August 7th.
1 midterm exam worth 15%, June 26th.
Final exam worth 45%. To pass the course, you must achieve a grade of at least 40% on the final exam. An extra 6% can be achieved through quizzes, see below.

Quizzes: In addition to assignments, midterm and the final, which already sum up to 100%, there will be several quizzes given during tutorials. They will be 10 minutes long and cover material presented on that day or on the previous week. I expect to have 5-6 such quizzes. They will be marked quite harshly with no partial marks as the assignments or the tests. I will take the 3 best quizzes from each student, weight them with 2% each, and add a maximum of 6% to the final grade.

20% Rule: For the midterm exam and the final exam, you will receive 20% of the marks on each question where you answer “I don’t know” and nothing else. This does not apply to homework assignments or quizzes.

Lateness Policy: Assignments are due at 6pm sharp on Tuesdays, in the CSC 363 drop box in BA 2220. I will pick them up minutes before lecture and I won’t have time wait for late assignments. I will not accept assignments during lecture or during tutorials. I will allow each student 3 grace days, to be used as you see fit. These days end at 6pm. So, following a Tuesday due date, I will collect whatever is left in the dropbox at 6pm on Wednesday, Thursday and Friday. These will be marked as having used 1, 2 and 3 grace days, respectively. If you have no grace days left and your assignment is late, it will not count. For any kind of special arrangements, contact the instructor before the assignment is due.

Plagiarism and other Offences:
Assignments are to be done individually. The work you submit must be your own.
http://www.cs.toronto.edu/~clarke/acoffences/