

CSC 463: Computational Complexity and Computability

Winter 2019

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Please use email for personal matters only. Include “CSC 463” in the subject or your email. For other matters, see the instructor or TAs during office hours.

Textbook Michael Sipser “Introduction to the Theory of Computation” (2nd or 3rd Edition)

Course website <http://www.math.toronto.edu/rossman/CSC463.html>

Course description Computability Theory (5 weeks): Turing machines, Church’s Thesis, decidability and semi-decidability, diagonal arguments, the Halting Problem and other undecidable problems, reductions, complete problems. Computational Complexity (7 weeks): The classes P and NP, polynomial time reducibility, NP-completeness, Cook-Levin Theorem, various NP-complete problems, time and space complexity, intractable problems, other topics.

Lectures Monday and Wednesday 2-3 in Bahen 1200

Tutorial Friday 2-3 in Bahen 1200

Instructor office hours Monday 3-4 in Bahen 6412

TA office hours (to be determined)

Grading 10% for each of four problem sets
20% midterm exam (in tutorial on March 1)
40% final exam

If you must miss an exam due to medical reasons, you must inform the instructor by email in advance (or as soon as possible) and present a doctor’s note in accordance with UofT policy.

Homework policy Assignments are due at the beginning of tutorial/lecture, since solutions will be discussed during the tutorial/lecture. The work you submit must be your own. You may discuss problems with each other; however, you should prepare written solutions alone. Copying assignments is a serious academic offense and will be dealt with accordingly.