

CSE2001 - Introduction to the Theory of Computation. Fall 2006

- Prerequisites:** CSE1019 “Discrete Math for Computer Science”
- Lectures:** Mondays and Wednesdays, 5:30 – 7:00 pm in CLH J
- Instructor:** Anton Belov, antonb@cse.yorku.ca
- Office Hours:** Wednesdays, 4:00 – 5:20 pm in CSEB 2014, or by appointment, or send questions via email (please start the subject line with [2001]).
- Problem Sessions:** TBD
- Course Website:** <http://www.cse.yorku.ca/course/2001>
Please check the website frequently – I will be posting all the important information, the course notes and solutions to home assignments and tests there.
- Textbook:** Michael Sipser. *Introduction to the Theory of Computation, Second Edition*. Thomson Course Technology, 2005. Available in the bookstore. Also, there is two copies on reserve in Steacie.
- Course notes:** Will be posted on the course website before lectures. The notes will be *intentionally* incomplete, so please do come to the lectures.
- Topics:** Finite Automata and Regular Expressions;
Pushdown Automata and Context-Free Grammars;
Turing Machines and Undecidable problems.
- Marking Scheme:** 30% - Assignments. 40% - 2 tests. 30% - Final exam.
- There will be one assignment about every two weeks. Assignments can be done in pairs. Assignments submitted after the solutions have been posted on the course website will not be accepted.
- Missed tests will result in 0.

References:

John E. Hopcroft, Rajeev Motwani and Jeffrey D. Ullman. *Introduction to Automata Theory, Languages and Computation, Second Edition*. Addison-Wesley, 2001. This book contains a superset of the material of the course textbook in a slightly more rigorous treatment.

John C. Martin. *Introduction to Languages and the Theory of Computation*. McGraw-Hill, 2003. Same as above.

Daniel Solow. *How to Read and Do Proofs: An Introduction to Mathematical Thought Processes*. Wiley, 2002. This is a really good overview of the general proof techniques used in mathematics. Recommended for students that are having problems understanding the reasoning behind certain types of proofs (e.g. by proof by contradiction).

Andrew Wohlgemuth. *Introduction to Proof in Abstract Mathematics*. Saunders College Publishing, 1990. This book presents various proof "templates" used in specific areas of mathematics. Look at it if you need to learn how to prove facts about sets, functions, relations, etc.