Theory of Automata, 
Math4805A/5605F, Fall 2013

Instructor: Dr. Steven Wang, 4368HP  
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Lectures: Tuesday, Thursday : 2:35pm - 3:55pm, PA 112

Office hours: Tuesday, Thursday 11:30pm-12:30pm.  
Other time is available by appointment.


Other recommended books:(Reserved in library)  
“Formal Languages and their relation to Automata” by John Hopcroft and Jeffery Ullman;  
“Introduction to the theory of computation” by Michael Sipser;  
“An introduction to formal languages and automata” by Peter Linz.

Prerequisites: MATH 3805 or MATH 3106 or MATH 3158 or permission of the School.

Evaluation: assignments 40%; midterm 25%; final exam 35%. You must pass the term work in order to pass the course. If you have a passing term mark and you do better on the final exam then I will count your final exam for 100% of the course. I do not accept doctor’s notes for late or missed work because I can not verify the authenticity.

Midterm Exam: The midterm exam (Oct. 22) worths 25 marks.

Assignments: Two assignments (20 marks each). Due dates: Oct. 22 and Dec 5.

Final Examination: This is a three hour closed-book exam scheduled by the University and will take place sometime during the examination period
Academic Accommodation
You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: http://carleton.ca/equity/accommodation/student_guide.htm

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: http://carleton.ca/equity/accommodation/student_guide.htm

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable).

List of Topics Covered: Regular languages, finite state automata, nondeterminism, Kleene’s Theorem, Pumping Lemma, Minimization and algorithmic problems. Additional topics that might be covered include: grammars, push down automata, context-free languages, transducers, the algebraic theory of automata, semigroups, Turing Machines, Schutzenberger’s theorem. These topics are subject to change.