CSC238F - Discrete Mathematics for Computer Science **Fall 1999**

Instructor: Daniel Panario, daniel@cdf.toronto.edu

Home page for the course:

`http://www.cs.toronto.edu/~daniel/teaching/238/index.html`

Lectures: Mondays and Fridays from 10:10 to 11:00 in MP 103.

Tutorials: Wednesdays from 10:10 to 11:00 in

Tutor name	Room	Student name
Catherine Stinson	(LM 159)	A-C
Luis Dissett	(MP 118)	D-J
Mohammad Salavatipour	(LM 157)	K-L
Theodoulos Garefalakis	(LM 123)	M-R
Zongpeng Li	(LM 155)	S-Z

Office hours: Fridays from 12:10 to 1:00 PM in SF2302D. Tutors will have office hours on Mondays before the assignments are due (Mondays Oct. 4, Oct. 18, Nov 8, Nov 22, Dec. 6), from 4:10 to 6:00 PM in SF3207.

Text: There is no textbook for the course. We will use Prof. Vassos Hadzilacos' Course Notes.

Other books for reference:

R. Grimaldi, "*Discrete and Combinatorial Mathematics*", Addison-Wesley, 4th ed., 1999.

K.H. Rosen, "*Discrete Mathematics and its Applications*", McGraw Hill, 2nd ed., 1991.

Course Outline:

1. Induction, program correctness [3 weeks].

   The principle of mathematical induction. Recursive definitions, structural induction. Applications of induction to correctness proofs of inductive and recursive algorithms.

2. Recurrence relations [3 weeks].

   Solution of recurrence equations. Application to the time complexity of divide and conquer algorithms.

3. Elementary logic] [4 weeks].

   Introduction to propositional and predicate logic. Truth tables, tautologies, logical implication and logical equivalence.

4. Finite state automata [3 weeks].

   Regular expressions. Finite state automata. Equivalence of finite state automata and regular expressions.

Marking Scheme:

5 Assignments at 8% each	40%
Term Test	20%
Final Exam	40%
	100%

To pass the course, you must receive at least 35% on the final exam.

Schedule:

First lecture - September 13

Assignment	Hand-out Date	Due Date
1	September 22	October 6
2	October 6	October 20
3	October 27	November 10
4	November 10	November 24
4	November 24	December 8

Midterm test - October 27

Last date to drop - November 5

Last lecture - December 10

Final exam - December 13 - 21, 1999.

Assignments are due at the beginning of tutorial. Graded assignments and test will be handed back in tutorial.

See the webpage of the course for the policies on plagiarism and lateness.