CSI 3104 /Winter 2011: Introduction to Formal Languages

CSI 3104 Introduction to Formal Languages (3 hours of lecture per week, 3 credits) Regular languages, finite automata, transition graphs, Kleene's theorem. Finite automata with output. Context-free languages, derivation trees, normal form grammars, pumping lemma, pushdown automata, determinism. Decidability. Recursively enumerable languages, Turing machines, the halting problem. Prerequisites: MAT1361, MAT2343 or MAT2143.

- PROFESSOR: Dr. Nejib Zaguia
 - o SITE 5-031, 562-5800 ext.:6782, <u>zaguia@site.uottawa.ca</u>
 - Office Hours: Tuesday 10:00-11:30
- LECTURES:
 - Monday, 19:00-22:00, BRS 206
- MANUEL:
 - Introduction to Computer Theory, Daniel Cohen, Wiley, 2nd edition.
 - Course notes will be available on the web page of the course: www.site.uottawa.ca\~zaguia\csi3104
- APPROXIMATE COURSE OUTLINE:

Introduction, Languages, Recursive Definitions, (Chapters 1, 2, 3) Regular Expressions, Finite Automata (Chapters 4, 5) Transition Graphs, Kleene's Theorem (Chapters 6, 7) Term Test 1, Nondeterministic Finite Automata (Chapter 7) Finite Automata with Output, Regular Languages (Chapters 8, 9) Non-regular Languages, Decidability (Chapters 10,11) Context-Free Grammars, Grammatical Format, (Chapters 12, 13) Chapter 13 continued, Pushdown Automata (Chapter 14) Context-Free Grammars = Pushdown Automata, Chapter 15 (pages 318-327) Non-Context-Free Languages, Context-Free Languages, (Chapters 16, 17) Decidability, Parsing, Turing Machines, (Chapters 18 "pages 402-410 and 415-423", 19) Recursively Enumerable Languages, (Chapter 23) Review

- EVALUATION
 - Assignments, 25% (late assignments not accepted)
 - Term Tests, 25% (will take place during class time, closed book)
 - o Final Exam, 50%
 - There will be 4 assignments.
 - \circ $\,$ To pass the course, you must obtain at least 50% on the final exam.