YORK UNIVERSITY

ATKINSON COLLEGE

Department of Computer Science and Mathematics

AK/COSC3432.03A–Analysis and Design of Algorithms

Course Outline–**Winter Session 1999**

First day of class: January 4, 1999

COURSE DIRECTOR

Dr. G. Tourlakis

Room 518 Atkinson College

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CLASSES

Monday Evenings

7:00–10:00 p.m.

Classroom: CCB 115

York Campus

Fundamental techniques for the design and analysis of algorithms. Divide-and-conquer; the generating functions approach to solving recurrence relations; depth-first search and non-deterministic programming; the greedy method; dynamic programming. Algebraic transformations (FFT, Modular arithmetic, Fast arithmetic); topics in lower bound theory; $\mathcal{NP}$-hard and $\mathcal{NP}$-complete problems.

Prerequisite.

AK/COSC3431.03, AK/COSC3501.03, and AK/MATH2442.03.

NOTE. Not open to students who have completed AK/COSC3430.06.

Work-Load and Grading.

Assignments (programming/non-programming) 70%
Final Exam 30%

Textbook.

G.J.E. Rawlins, *Compared to What? An Introduction to the Analysis of Algorithms*, W.H. Freeman.