CSC 310 January 6th, 2003
Spring, 2003

CSC 310 : Information Theory

Class Sessions:

Lectures	Monday	3:10 to 4:00	Room RW 117
	Wednesday	3:10 to 4:00	Room RW 117
Tutorial	Friday	3:10 to 4:00	Rooms SS 1070 and SS 1072

Instructor:

Professor K.C. Sevcik
Room BA 4260
(416) 978-6219
kcs@cs.utoronto.ca

Tutors:

Cosmin Truta	cosmin@cs	SS 1070
<tba>	<tba>	SS 1072

Course Web Page:

`http://www.cs.toronto.edu/~kcs/310/csc310.html`

Texts:

G. A. Jones and J. M. Jones,
Information and Coding Theory
Springer, London, 2000.

A. Drozdek,
Elements of Data Compression,
Brooks / Cole, Canada, 2002.

Marking Scheme:

Assignments	50%
Midterm Test	15%
Final Exam	35%
	100%

Schedule:

Item	Out	Due
Assignment #1	Jan. 13	Jan. 29
Midterm Test		Feb. 28
Assignment #2	Feb. 3	Mar. 5
Assignment #3	Mar. 10	Apr. 3
Final Exam		Apr. ??

[See Other Side.]

Tentative Course Outline:

Week	Topic	Jones & Jones	Drozak
1	Introduction and Overview	1.1	---
2	Types of Codes	1.2-1.7	1.2
3	Measuring Information Content	2.1,3.1-3.3,4.6	1.1
4	Coding Algorithms	2.2-2.6,3.4-3.7	2, 3.1
5	Arithmetic Coding	---	3.2, 4
6	Coding Text	---	5
7	Noisy Information Channels	4.1-4.8	---
8	Error Correcting Codes	5, 6, 7	---
9	Coding Number Sequences	---	6.1-6.2
10	Coding Sounds	---	6
11	Coding Images	---	7, 10
12	Coding Video Sequences	---	8, 11, 12, 13
13	Summary and Review	---	---

Optional Supplementary Books:

R. B. Ash,
Information Theory,
Dover, New York, U.S.A., 1990.

T. C. Bell, J. G. Cleary, and I. H. Witten,
Text Compression,
Prentice-Hall, Englewood Cliffs, New Jersey, U.S.A., 1990.

T. M. Cover and J. A. Thomas,
Elements of Information Theory
John Wiley and Sons, New York, U.S.A., 1991.

R. W. Hamming,
Coding and Information Theory,
Prentice-Hall, Englewood Cliffs, New Jersey, U.S.A., 1986.

D. Salomon,
Data Compression: The Complete Reference
2nd Edition, Springer-Verlag, New York, U.S.A., 2000.

K. Sayood,
Introduction to Data Compression,
Academic Press, San Diego, California, U.S.A., 2000.

Assignment Content:

There will be three assignments. Each one will likely involve some programming and some analysis.