Math 437/837 Topics in Applied Mathematics
CISC 490 Topics in Computing Science I

Mathematics of Information Technology

In this digital age, it is becoming increasingly clear that fundamental mathematical theories and efficient computer science algorithms are finding new applications in technology. This course focuses on several dominant themes in this context. Topics to be covered include: coding theory and data compression, error correcting codes, public key cryptography, Markov chains and search engines, GPS and spherical geometry, fractals and image compression, and the DNA computer.

Prerequisites: Math 110 or MATH 111, Math 120 or MATH 121, and one 100-level CISC course (or equivalent courses and permission of the instructors).

Instructors: **Selim G. Akl**, Professor and Director, School of Computing. email: akl@cs.queensu.ca
M. Ram Murty, FRSC, Queen's Research Chair & Head, Department of Mathematics & Statistics. email: murty@mast.queensu.ca
Text: C. Rousseau and Y. St-Aubin, Mathematics and Technology, Springer, 2008.
Time: Winter term, January-April 2015, Tuesday 13:00 - 14:30, Thursday 11:30 - 13:00 in Jeffery 110.
Schedule:
Weeks 1-6: Chapters 1-5 and 9. Weeks 7-12: Chapters 6-8 and 11-13.
Marking Scheme:
Weeks 1-6: Two assignments (50%). Weeks 7-12: Two tests (50%).
There will be no mid-term and no final exam.
Office hours: By appointment.