THE DEPARTMENT OF MATHEMATICS & STATISTICS

THE UNIVERSITY OF WINNIPEG

Welcomes

Dr. Bill Martin, WPI

Friday, March 10, 2006
12:30 p.m. – 1:20 p.m.
Room 2M67
University of Winnipeg, 515 Portage Avenue

Dr. Martin will talk about:

"The Math Behind the Compact Disc"

Linear Algebra and Error-Correcting Codes

Abstract:

Why do CDs and DVDs sound so clear? "It must be the lasers" you might say. Yes, there are some amazing engineering components to the design, but the fundamental element in the noise reduction system in the compact disk and similar technologies is based on algebra and geometry. Yes, abstract mathematics plays a crucial role in this very popular technology. Come and find out exactly how it works. We will do a bit of modeling, a bit of abstract algebra and some horrendous calculations to learn the secret behind the original SONY/Philips compact disc design. No mathematics background will be assumed, but we will use a bit of linear algebra along the way.

E V E R Y O N E W E L C O M E