Title: Introduction to Coding Theory
Speaker: Erik Hieta-Aho, Ohio University
Date: Wednesday, February 15th
Time and Location: 1:00-1:50pm in 3-2643

Abstract: For anyone alive today, the applications of a branch of mathematics called Coding Theory have been a part of our daily lives in ways in which we may not even notice and might take for granted. This is the Information Age and as information flows through any media, one thing is ubiquitous: a need for accuracy to prevent the negative effects of noise. This talk will begin with an introductory understanding of what Coding Theory is and how it has influenced so many of our daily lives. Coding Theory has borrowed from many branches of mathematics to tackle its problems, however the basic idea is quite simple: one must add some redundancy to sent messages to balance the negative effects of noisy channels. We will start with a nice construction that requires virtually no advanced mathematics and then we will proceed to show some remarkably good results that can be obtained using only linear algebra notions with the caveat that this will be done over finite fields rather than over the reals (the usual setting in an undergraduate Linear Algebra course.)