Discrete Mathematics Seminar

Time: Friday, 5 October 2012, 1:30-2:30 PM
Room: 238 Derrick Hall
Title: Bases for Finite Cyclic Groups
Speaker: Dr. Xingde Jia, Mathematics Department

Abstract:

For positive integers d and k, let $m(d,k)$ be the maximum positive integer m such that there exists a set A of k integers such that every integer is congruent to a sum of at most d elements of A modulo m. It is easy to see that $m(d,1)=d+1$ and $m(1,k)=k+1$. However, the computation of $m(d,k)$ in general is unexpectedly complex. It is still an open problem to have an exact formula for $m(2,k)$. In this talk, I will discuss the current development of this and other related problems, and prove a lower bound for $m(2,k)$. I will also discuss the computational aspects of this problem.