Lethbridge Number Theory and Combinatorics Seminar

Monday — November 27, 2017
Room: C630
Time: 12:00 to 12:50 p.m.

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A Strongly Regular Decomposition of the Complete Graph and its Association Scheme

Abstract: A *Strongly Regular Graph*, SRG(ν, k, λ, μ), is a k-regular graph with ν vertices such that every two adjacent vertices have λ common neighbors, and every two non-adjacent vertices have μ common neighbors. For each positive integer m, a construction for 2^m disjoint SRG$(2^{2m}(2^m+2), 2^{2m}+2^m, 2^m, 2^m)$ will be shown to form a decomposition of the complete graph with $2^{2m}(2^m+2)$ vertices, if the cliques of size 2^{2m} is considered as a strongly regular graph with parameter $(2^{2m}(2^m+2), 2^{2m}-1, 2^{2m}-2, 0)$.

By decomposing the cliques and the strongly regular graphs further, we show the existence of a symmetric association scheme with $2^{m+2}-2$ classes and explain, by an example, how to find the first and second eigenmatrices of the scheme.

EVERYONE IS WELCOME!

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http://www.cs.uleth.ca/∼nathanng/ntcoseminar/

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