TEXAS STATE UNIVERSITY

The rising STAR *of Texas*

Discrete Mathematics Seminar

Time: Friday, 28 April 2017, 2:15 – 3:15 PM
Location: 237 Derrick Hall
Title: Total Forcing in Graphs
Speaker: Mr. Randy Davila, Department of Mathematics, Texas State University

Abstract:

If G is an isolate-free graph and $S \subseteq V(G)$ is a *zero forcing set* which induces an isolate-free subgraph, then S is called a *total forcing set*. The minimum cardinality of a total forcing set in G, written $F_t(G)$, is the *total forcing number* of G. In this talk we provide basic properties of $F_t(G)$, relate $F_t(G)$ to well known domination parameters, establish NP-completeness of the decision problem associated with $F_t(G)$, and provide a sharp computable upper bound for $F_t(G)$ in terms of order and maximum degree. Provided time permits, we will also discuss total forcing in trees and characterize all trees with zero forcing number equal to the total forcing number minus 1.