Course Description. We will discuss applications of Linear Algebra to a variety of problems in graph theory or that can be modeled by graphs. These should include: Moore graphs, the Friendship Theorem, resistance distance, graph energy, Lovász number, the Cvetkovic bound, Google Page-Rank, Ramanujan graphs, unimodular matrices, the matrix-tree theorem, and eigenvalues of bipartite graphs, regular graphs, and saturated hydrocarbons.