ALGEBRAIC GRAPH THEORY

Class #: 30904

Time: 3:00 PM - 4:15 PM (Mondays and Wednesdays)

Room: WXLR A111

Instructor: Samantha Dahlberg

Description: In this course we will study properties of graphs through their associated eigenvalues and vectors. We will find that the eigenvalues and vectors
- can tell us how to draw graphs in a potentialy insightful way,
- can give us bounds on the number of edges we need to delete to disconnect a graph,
- can tell if a graph is bipartite,
- can tell us a bound on the chromatic number of a graph,
- and more.

We will follow the lecture notes by Dan Spielman at Yale, and use the pre-print version of his book.

Prerequisites: Linear algebra and graph theory.

Text: Dan Spielman's Notes (www.cs.yale.edu/homes/spielman/561/notes) and pre-print book (cs-www.cs.yale.edu/homes/spielman/sagt/sagt.pdf) will be our main reference. There is no required text.