CO444/644 Algebraic Graph Theory

Instructor: Chris Godsil

This course will provide an introduction to algebraic graph theory. Topics will include:

1. Cayley graphs, vertex transitive graphs
2. Graph homomorphisms
3. Eigenvalues of graphs
4. Vector colourings and quantum colourings of graphs.

Suggested reading: Godsil and Royle: *Algebraic Graph Theory*

Prerequisites: The course will cover parts of Chapters 1–3, 6–9 from the above reference. The graph theory demands are minimal. If you are unfamiliar with permutation groups, see Chapter 2 of the above (but I will go over the necessary background in some detail). There will be demands on your understanding of linear algebra.