Here is a **brief overview** of the topics we will cover: Iitaka dimension of line bundles and Kodaira dimension; birational classification of algebraic varieties; Iitaka's subadditivity conjecture; positivity for line bundles and vanishing theorems; weak positivity for coherent sheaves; variation and Viehweg's conjecture; algebraic hyperbolicity of parameter spaces; superadditivity of Kodaira dimension for smooth morphisms.

I will assume **some familiarity** with fundamental algebraic geometry, roughly at the level of Hartshorne's book plus the first two chapters in Griffiths-Harris, and also some basic familiarity with various notions of positivity for line bundles, as in Ch. 1 and 2 in Lazarsfeld's book. The second part of the course will use some Hodge theory, as in the first volume of Voisin's book, and eventually a bit of D-module theory as in the book by Hotta-Takeuchi-Tanisaki plus Hodge module theory as in the Math 296 notes on my webpage. I will briefly review some of these notions and indicate more precise sources as we go along.

Course structure:

We will meet in person on Monday and Wednesday, 10.30-11.45am, in SC 110.

I am not planning to have homework sets or an exam. There will be however various exercises scattered throughout the lectures, and you are certainly encouraged to do them. For undergraduates or beginning graduate students however, we may need to find an accommodation involving some homework and/or a small reading project for a grade -- the main point is to get something out of the class, regardless of the level.