

Astrophysics II - Topics in General Relativity Physics 8012, Fall 2008

Lam Hui

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Office hours. Monday 3:15 - 4:15 pm, or by appointment.

Class Meeting Time/Place. Monday and Wednesday, 12:30 pm - 1:45 pm. Pupin 831.

Prerequisites. I will assume roughly the equivalent of a semester of general relativity (GR). If you haven't taken GR, please come see me. *However*, the first few weeks of the course, which focus on gravitational lensing, actually require very little knowledge of GR. You are welcome to sit in just for this portion, even if you do not have a background in GR. I should also add that for much of the course, only the basics of GR is assumed. If you have any questions at all as to whether this course is suitable for you, please see me.

Requirements. Problem sets.

Topics we may cover. Gravitational lensing, gravitational waves, Penrose diagrams, alternative gravity theories, gravity in extra dimensions, Hawking radiation.

Texts. The main text is Sean Carroll's *Spacetime and Geometry: An Introduction to General Relativity*, published by Benjamin Cummings, although we will deviate from it for several topics. It is available at Book Culture on W. 112th Street. The website is <http://www.bookculture.com>.