From Quarks to the Cosmos
Physics 3002, Spring 2009

Lam Hui

My coordinates. Pupin 1026. Phone: 854-7241. Email: lhui@astro.columbia.edu.
URL: `http://www.astro.columbia.edu/~lhui`
Office hour. Wednesday 2 - 3 pm or by appointment.
Class Meeting Time and Place. Monday and Wednesday 3 - 4:15 pm at Pupin 214.
Teaching Assistant. Stefanos Marnerides. Pupin 931. Email: stefanos@phys.columbia.edu.
Class website. Follow the link above.
Prerequisites. It is assumed that you have completed the Physics introductory sequence i.e. 1401-1402-1403 or 1601-1602-2601 or 2801-2802. If you have not completed the sequence, you must come see me.
Requirements. Problem sets (50 %), Mid-term Exam (25 %) and Final Exam (25 %).
Topics covered. Basics of hot big bang standard model. Nucleosynthesis and the thermal history of the universe. Inflation. Structure Formation. Dark matter and dark energy. Microwave background. Gravitational lensing. General relativity (if time permits).
Textbooks. The required text, which has been orderd at Book Culture (536, West 112th Street, URL: `http://www.bookculture.com`), is

- Introduction to Cosmology, by Barbara Ryden, published by Addison Wesley.

Other recommended references, which you can find in the Physics library, are:

- An Introduction to Modern Cosmology, by Andrew Liddle, Wiley.
- A First Course in General Relativity, by B. Schutz, Cambridge University Press.
- Structure Formation in the Universe, by T. Padmanabhan, Cambridge University Press.
- Cosmological Physics, J. Peacock, Cambridge University Press.
- Modern Cosmology, by Scott Dodelson, Academic Press.