PHY 524 — Cosmology
Syllabus

Instructor: K. M. Lanzetta

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Office hours: To be assigned and by appointment

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Course description: This course provides an introduction to physical cosmology. Observational topics include the Big Bang, Hubble expansion, extragalactic distance scale, cosmic microwave background radiation, light element abundances, quasar absorption lines, and the intergalactic medium. Theoretical topics include the Friedmann equation, gravitational instability, comparison of large-scale structures and velocities, cosmic virial theorem, Robertson-Walker metric, thermal history of the Universe, light element nucleosynthesis, matter-radiation coupling, recombination, and small-scale anisotropy of the microwave background radiation.

Text: The recommended text for the course is *Introduction to Cosmology* by Barbara Ryden (2003, Addison-Wesley). Other text books will be made available at the reserve section of the library.

Grades: Grades will be based on homework (25%), two mid-term examinations (25% each), and a final term paper (25%).

Numerical analysis: Some of the homework assignments will require numerical analysis, which can be reasonably carried out only on a computer. Some basic computer skills (i.e. familiarity with a computer language or a numerical analysis package) are required to complete these assignments. *See me immediately if this is a problem.*

Important notice: If you have any condition, such as a physical or mental disability, which will make it difficult for you to carry out the work as outlined above or which will require extra time on examinations, please notify me in the first two weeks of the course so that we may make appropriate arrangements.