ASTR4030/6030 - COSMOLOGY
Spring 2010

Professor: Loris Magnani  Office: Physics 238  Phone: 542-2876
E-Mail: loris@physast.uga.edu
Web Page: www.physast.uga.edu/~loris/astr4030/prob.html
Class Hours: MWF 2:30 PM – 3:20 PM in Physics 254
Office Hours: MF 1:30 PM – 2:30 PM – (or by appointment)

Textbook:

Introduction to Cosmology – Barbara Ryden (Addison Wesley)

This course is an upper-level astronomy course dealing with the modern ideas and theories of how the Universe came to be. I assume you have at least two years of Calculus and at least one semester of upper level Mechanics, Electromagnetic theory, and Thermodynamics in your background. ASTR 4010 and 4020 are recommended, but not required for this course.

Grading: 1 or 2 homework problems will be assigned each week on the Monday class of that week. They are due the following Monday. You may work with others in the class on the homework, but, if you choose to do so, you must write on the homework who you worked with. There is no penalty for working with others, but I will assign the same exact grade to all the people who worked on the problem together. There will be a midterm on Friday, March 5th and a Final on Friday, May 7th. The homework will constitute 30% of your grade, the midterm 30%, and the final 40%.

If you have any questions or concerns about this syllabus, please contact me.

Tentative Class Schedule & Readings:

Week of  Topic/Readings
January 3 – Introduction
January 10 – Fundamental Observations / Chapters 1 & 2
January 17 – Newton Versus Einstein / Chapter 3
January 24 – A Little Relativity / Notes posted on website
January 31 – Cosmic Dynamics / Chapter 4
February 7 – Lambda & Quantum Mechanics / Notes posted on website
February 14 – Single Component Universes / Chapter 5
February 21 – Single Component Universes / Chapter 5
February 28 – Multiple-Component Universes / Chapter 6 / Midterm March 2nd
**MIDTERM EXAM – Friday, March 5th** – Covers Ch. 1-5
March 7 – Spring Break!
March 14 – Multiple-Component Universes / Chapter 6
March 21 – Measuring Cosmological Parameters / Chapter 7
March 28 – Dark Matter / Chapter 8
April 4 – The Cosmic Microwave Background / Chapter 9
April 11 – Nucleosynthesis and the Early Universe / Chapter 10
April 18 – Inflation and the Very Early Universe / Chapter 11
April 25 – The Formation of Structure / Chapter 12
**FINAL – Friday, May 7th** – Covers Ch. 6-12