PHYS 610: Early Universe
Fall 2012

Text: Weinberg: Cosmology
amazon.com has it for $70 with free shipping.

Other references: Kolb and Turner: Early Universe
Weinberg: Gravitation and Cosmology
Carroll: Spacetime and Gravitation

Instructor: Prof. Graham Kribs
Office: 470 Willamette Hall
Office Hours: Anytime my door is open.
E-mail: kribs@uoregon.edu
(This is the best way to reach me)

Class Website: http://wingate.uoregon.edu/phy610

Style: The class will structured differently than most other physics classes. Nearly all lectures will be given by you – students in the class – in discrete chunks over the quarter. The topics will be firmly determined roughly 1 week before class.

Grade: Graded on three components:
40%: Lectures that you give in class
20%: Active participation in classes
40%: Final project

Grading Policy: Pass (A- and above): Outstanding performance on all lectures assigned to you. Excellent class participation. Final project is completed on-time, is very well-researched, well-written.
Pass (B- and above): A solid attempt on all lectures assigned to you. Ability to understand and grasp the material sufficient to explain it to your fellow students. Final project is completed on-time, is well-researched and decently written.
Fail (C+ and below): Failure to give adequate lectures (unprepared; significant intervention by Instructor and/or other students). Failure to participate in class. Failure to show up in class. Poor performance on final project.
Missed Classes: This style of class works only when student lecturers show up to lecture to their fellow students. So, attendance at all classes is mandatory. Any variation in this policy is at my discretion; contact me well in advance (or have a documented medical emergency).

Class Cancellation: In the unlikely event that I have to cancel class at the last minute (bad weather or otherwise), I will attempt to email everyone.

Final Project: Each of you will select a final project from an ensemble of topics that I will provide. You’ll do some research, and present your understanding in some combination of verbal and written reports to me. More details to follow.

Syllabus

This course is an introduction to the physics of the Early Universe. Among the topics includes:

- No-nonsense General Relativity
- Expansion of the Universe
- CMB
- Thermal History
- Big Bang Nucleosynthesis
- Dark Matter

This will take us through the major pillars of modern cosmology.