VERY EARLY UNIVERSE

Goals

The aim of the course is to prepare beginning graduate students for research in theoretical cosmology, and to give students in related areas interested in cosmology the background to follow the field.

Topics Covered

The following are suggested topics to focus on. Student input is welcome.

* Overview of Standard Big Bang Cosmology
* Inflationary Cosmology
* Theory of Cosmological Perturbations
* Cosmic Microwave Background Anisotropies
* Gravitational Waves
* Reheating in Inflationary Cosmology
* Topological Defects in Cosmology
* Alternatives to Inflation
* Elements of Superstring Cosmology

Format

The format of the course will be that of a “guided” reading course. It will meet once a week for about two hours. Each week will cover a set of pre-assigned readings. The students are required to hand in summaries of the readings emphasizing their questions by the end of the afternoon of the day before the class. The class will begin with a summary of the material. Most of the class, however, will be devoted to discussion of the issues raised by the students in their summaries.
Meeting Time: Tuesday: 13:00 - 15:15 PM, Room 326

Brief Organizational Meeting: TBA