

**Physics 3368**  
**Astrophysics and Cosmology**  
**Fall 2009**

**When/Where:** 11:00 - 11:50 / Dallas Hall

**Instructor:** Professor Jodi Cooley  
151 Fondren Science Building  
214-768-4687  
[cooley@smu.edu](mailto:cooley@smu.edu)

**Office Hours:** Wednesdays from 3-4 pm. Other times available by appointment

**Prerequisite:** PHY 3368 Introduction to Modern Physics

**Course Objective:**

This course is an advanced undergraduate course on cosmology and early structure formation in the universe. At the end of this course, you will have a foundation in understanding the fundamentals of standard big bang cosmology and some of its extensions.

**Topics:**

Observational and theoretical basis of the standard model  
Spacetime and the Friedmann-Robertson-Walker metric  
Dynamics of the expanding universe  
Evolution of homogeneous cosmological models  
The cosmic microwave background  
Big Bang nucleosynthesis  
Dark matter and dark energy  
Inflationary cosmology  
Cosmic microwave background anisotropy  
Formation of galaxies and large scale structure

**Textbook:**

Required: Introduction to Cosmology by Barbara Ryden

**Homework:** There will be homework due at the end of each chapter. The due date for each assignment will be announced in class. Homework is required to be handed in at 11:00 am on the due date assigned. No credit will be given for late assignments.

**Exams:** There will be a midterm exam (Monday, October 19 in class) and a final exam (Thursday, December 17 at 11:30 am).

**Paper:** A five page paper on a topic of your choice, related to the course will be due at 11 am on December 9. Details on the paper will be given in class in October.

**Grading:** Your course grade will be based on Homework (25%), Midterm Exam (25%), Final Exam (25%) and the Paper (25%).

**University Honor Code:** The student code of conduct can be found on page 143 of the 2009-2010 student handbook. All students will be expected to adhere to it. Any student found cheating or plagiarizing another's work will be given a zero for that assignment and a complaint will be filed through the Vice President for Student Affairs Office.

**Disability Accommodations:** Students needing academic accommodations for a disability must first contact Ms. Rebecca Marin, Coordinator of Services for Students with Disabilities (x84557) to verify and establish eligibility for accommodations. After that, please make an appointment with me to make appropriate arrangements.

**University Policy on Religious Holidays:**

Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. **Friday 11, September 2009** is the last day to request a religious absence. (See University Policy No. 1.9.)

**Excused Absences for University Extracurricular Activities:**

Students participating in an officially sanctioned, scheduled University extracurricular activity will be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)

**Important Dates:**

University Calendar: <http://smu.edu/registrar/Calendar/calendar09-10.asp>

August 25 - Opening Convocation

August 26 - First day of classes

September 1 - Last day to enroll/add/drop without grade record or tuition billing

September 7 - Labor Day (University Holiday)

September 9 - Follows a Monday class schedule

October 12 - 13 - Fall Break, no classes

November 10 - Last day to drop

December 1 - Last day to withdraw from the University

December 9 - Last day of instruction

December 10 - Reading Day

December 11 - 17 - Final Examinations

December 19 - Graduation

