

# Syllabus

## Physics 3368: Principles of Astrophysics & Cosmology Spring 2015

**Course Webpage:** <http://www.physics.smu.edu/cooley/phy3368/>

**When/Where:** Mondays and Wednesdays  
157 and 032 Fondren Science Building

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

Mr. Matt Stein (Teaching Assistant)  
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**Office Hours:** TBD

**Prerequisite:** PHYS 3305

Cosmic distance scales, physics of stars, expansion of the universe, cosmic nucleosynthesis, and other selected topics as appropriate

### **Course Objective:**

Upon completion of this course the students will be able to demonstrate the basic understanding of cosmic distance scales, the physics of stars, expansion of the universe, cosmic nucleosynthesis and other selected topics as appropriate. Students will apply their understanding of the basic principles of astrophysics and cosmology to a contemporary research topic.

The above objectives will be achieved through: participation in in-class discussion of lecture and reading materials; discussion with the lead instructor(s) of reading and lecture during regular office hours; successful completion of routine homework assignments; several in-class examinations; the writing of a research paper on a topic related to the course, chosen by the student in consultation with the professor.

### **Student Learning Outcome**

1. Students will be able to select and use the appropriate research methods and search tools for needed information.
2. Students will be able to evaluate sources for quality of information for a given information need.

3. Through multiple opportunities supervised and/or directed by a professor, an editor or other authority, students will demonstrate proper use of language through completion of a substantial amount of purposeful writing appropriate for a specific or targeted audience.

**Textbook:**

Required: Astrophysics in a Nutshell (1st edition) by Dan Maoz

Recommended: A Mathematical Handbook (i.e. Schaum's Outline Series: Mathematical Handbook of Formulas and Tables by Murray R. Spiegel, 3rd. edition)

**Homework:** Homework will be assigned in class and must be submitted before 6 pm on the due date. NO CREDIT WILL BE GIVEN FOR LATE HOMEWORK. Solutions will be provided for each chapter after the due date and time. The solution notes may not be complete and may contain errors. Use them with caution. I encourage you to discuss your work with a study group and use office hours if you have difficulty.

**Exams:** There will be two mid-term exams (Midterm Exam 1: Wednesday March 18, Midterm Exam 2: Wednesday, May, 6:30 pm).

**Labs:** There will be 7 laboratory activities associated with this class. Labs will meet in FOSC 032 on designated Mondays (Jan. 26, Feb. 9, Feb 23, Mar. 16, Mar. 30, Apr. 13, and Apr. 27).

**Paper:** You will be required to write a 3000 word paper on a topic related to the course, chosen in consultation with the lead professor. The complete, final paper is due at 6 pm on Wednesday, April 15th. You will have a chance to rewrite the paper if you are unhappy with your grade. The final rewrite of your paper is due at 6 pm on the last day of instruction, Monday, May 4th.

**Grading:** Your course grade will be based on homework (20%), midterm exams (20% each), labs (20%) and paper (20%).

**University Honor Code:** The student code of conduct can be found in the 2014 - 2015 Student Handbook which is available on the SMU website (<http://www.smu.edu/StudentAffairs/StudentLife/StudentHandbook>). 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 register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit <http://www.smu.edu/Provost/ALEC/DASS> to begin the process. Once registered, students should then schedule an appointment with the professor as early in the semester as possible, present a DASS

Accommodation Letter, and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

**Religious Observance:** 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. (See University Policy No. 1.9.)

**Excused Absences for University Extracurricular Activities:** Students participating in an officially sanctioned, scheduled University extracurricular activity should 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:**

Please see the University Calendar: [http://smu.edu/registrar/academic\\_calendar.asp](http://smu.edu/registrar/academic_calendar.asp)