

ASTRONOMY 400A – Theoretical Astrophysics Fall 2011

Class meets: MWF 1:00-1:50 pm

Classroom: Steward Observatory Room 204

Instructor: Dr. Josh Eisner

Office: Steward Observatory Room N414

Phone: 626-7645

Email: jeisner@email.arizona.edu

Office Hrs: By appointment or whenever my door is open

Course Description

This course is a continuation of the ASTR300AB series. The main topic of the course is stellar structure, a field of astronomy that brings many different branches of physics to bear on the fundamental objects of astronomical study—stars. Toward the end of the semester, we may discuss several other (related) topics as well, including planet formation and hydrodynamics.

Textbook

The main textbook for the course is “An Introduction to the Theory of Stellar Structure and Evolution” by Dina Prialnik. Presumably you have already acquired this book, but if not, copies should be available in the campus bookstore. Several topics covered in the course are beyond the scope of this book, and I recommend “Accretion Processes in Star Formation” by Lee Hartmann as another reference.

Lectures

Monday and Wednesday classes will be devoted to lectures, which will generally follow the content of the main textbook. Friday classes may contain some lecture material, but will likely be more free-form, including problem-solving sessions and the opportunity for students to ask questions that may not be directly related to the topics covered in lecture.

Homework and Classwork

There will be approximately six homework assignments during the semester, which will consist of problems that should be done individually (i.e., not in collaboration with fellow students) and group problems where collaboration is allowed. These assignments will be due *at the beginning of class on Mondays*. Some of the problems will be done during the Friday class periods. For collaborative assignments, each student must turn in his or her own copy, but should include the names of those with whom he or she worked. Note also that some of the assignments may include computational components.

Exams

There will be two mid-term examinations as well as a final exam. These exams will cover material discussed in lecture as well as in the homework.

Grading

The grades for the course will be computed as follows:

Homework	40%
Midterm Exams	30% (15% each)
Final Exam	30%

Grades may be adjusted to reflect overall class performance.

Academic Integrity

The University of Arizona's Code of Academic Integrity can be viewed at

<http://dos.web.arizona.edu/academicintegrity/>

Consequences of academic dishonesty can range from loss of credit on an exam or assignment to expulsion from the university, depending on the severity of the offense.

Topic Schedule and Corresponding Reading

A rough schedule of topics and readings is given on the course website. As the semester progresses, the schedule will be updated to reflect actual progress.

Course Website

<http://www.u.arizona.edu/~jeisner/astr400a/>