

**ASTRONOMY 400A – Theoretical Astrophysics  
Fall 2015**

**Class meets:** T/Th 11:00-12:15

**Classroom:** Steward Observatory Room 204

**Instructor:** Dr. Josh Eisner

**Office:** Steward Observatory Room N414

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**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**

Lectures will generally follow the content of the main textbook. Time-permitting, we will devote the last part of Tuesday’s class time to problem-solving sessions and more free-form 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 Thursdays*. Some time during the Tuesday class periods will be devoted to problem solving, including homework problems. 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. ASTR 400A is a writing emphasis course, and we will have an additional homework devoted to a scientific writing exercise.

### **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://deanofstudents.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.

### **Students with Disabilities**

If you anticipate barriers related to the format or requirements of this course, please meet with me so that we can discuss ways to ensure your full participation in the course. If you determine that disability-related accommodations are necessary, please register with Disability Resources (621-3268; [drc.arizona.edu](http://drc.arizona.edu)) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

### **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/>