

**ASTRONOMY 400A – Theoretical Astrophysics**  
**Fall 2017**

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

**Classroom:** Steward Observatory Room 204

**Instructor:** Dr. Josh Eisner

**Office:** Steward Observatory Room N414

**Phone:** 626-7645

**Email:** [jeisner@email.arizona.edu](mailto:jeisner@email.arizona.edu)

**Office Hrs:** Wednesday 2-4 pm, by appointment, or when 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 include computational components.

ASTR 400A is a writing emphasis course, and we will have a short additional homework devoted to a scientific writing exercise. This exercise is intended to help students critique a piece of professional science writing, and to provide an opportunity for feedback on student writing from peers and the instructor.

### **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.

### **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/ast400a/>

### **Absence and Class Participation Policy**

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>. The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>. Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: <https://deanofstudents.arizona.edu/absences>

### **Academic Integrity**

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

### **Students with Disabilities**

Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit <http://drc.arizona.edu>.

**Threatening Behavior Policy**

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

**UA Nondiscrimination and Anti-harassment Policy**

The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

*Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.*

