

**ASTR/PTYS 450/550: PLANET FORMATION**  
i.e. “Origins of the Solar System and other Planetary Systems”  
Spring 2018

**Class meets:** T/Th 2:00-3:15 in SO 202 (*No class March 13 or 15*)  
**Instructor:** Dr. Andrew Youdin  
Steward Observatory, Room N418  
[youdin\[at\]email.arizona.edu](mailto:youdin[at]email.arizona.edu)  
**Office Hours:** Wed. 2-3PM and by appointment (*strongly encouraged*)  
**Course Website:** at <https://d2l.arizona.edu>  
**Prerequisites:** ASTR 300AB & 400A or equivalents (*please consult the instructor with concerns about your preparation*)

**Course Description:**

The goal of the course is to develop an understanding of the formation of planetary systems. Topics covered include observations of planetary systems; the structure and evolution of planet forming disks; the formation of planetesimals, terrestrial planets and gas giants; and the dynamical evolution of planetary systems. The course objective is to develop qualitative and quantitative fluency in these topics at the forefront of astronomical research.

**Textbook:**

“*The Astrophysics of Planet Formation*” by Philip Armitage. Additional reading may be assigned to cover cutting edge topics, for instance “pebble accretion.”

**Class meetings:**

As a small seminar class, it is essential that students come to class prepared and ready to discuss assigned readings. At least twice per semester (*once for undergraduates*) each student will be asked to present material from the textbook or another source. As with instructor-led “lectures,” both the presenter and audience should work to make these presentations interactive.

**Classwork and Homework:**

As reflected in the grading scheme (below) the emphasis in the course is on in-class participation, which will include presentations, discussion and in-class exercises. Due to the expected preparation before classes, a relatively small number of homework problems will be assigned (1-2 per week).

**Exams:**

One mid-term examination and a final exam. Exams will address both the qualitative and quantitative understanding of the topics covered.

**Grading:**

The grades for the course will be computed as follows:

Class Participation	55%
Homework	10%
Midterm Exam	15%
Final Exam	20%

Grades may be adjusted to reflect overall class performance. *In all grading, graduate students will be held to a higher standard, and more advanced quantitative problems will be optional for undergraduates.*

**Absence and Class Participation Policy:**

*Course attendance is expected and any anticipated absences should be communicated to the instructor in advance.*

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>.

**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>.

**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>.

**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>

**Disclaimer:**

*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.*