

Planetary Sciences 206-001 (ASTR/PTYS 206-001)  
 Our Golden Age of Planetary Exploration  
 Tier-Two General Education Course  
 Flandrau Planetarium, TTh 2:00-3:15

*Note: See the phone/laptop/tablet policy on page 2 below.*

**Instructor:**

Dr. Steve Kortenkamp, Department of Planetary Sciences, Kuiper Space Sciences 353.  
 See Contact Info on D2L for TA information, email addresses, study sessions, etc.

**Course Objectives:**

A student who engages with and successfully complete this course will have developed a broad understanding of many fundamental concepts in planetary science, together with an appreciation of the discoveries and reasoning that led to this understanding. The course is intended for non-science majors as well as astronomy and planetary science minors. The course will include routine numerical and technical work (e.g., simple geometry, Excel & Word, Moviemaker, iMovie, etc).

**Course Components:**

Depending on the division of grade chosen by each student, the course may involve quizzes, exams, homework assignments, in-class participation, and/or out-of-class projects. The schedule of exams and assignment due dates will be announced in class and posted on the class D2L page. The final exam will be held on the date/time designated by the registrar, as indicated at registrar.arizona.edu/schedules/finals.htm

**Division of Grade Between Course Components:**

Each student must design their own customized weighting for the different components of the course from the allowed ranges listed below. Your total weighting must add up to 100%. For most students it is anticipated that about 40% of the grade will be determined by the mid-point of the semester. Please use 5% increments.

- 5% Mandatory Assignments
- 0-15% In-Class Participation
- 0-40% Moon Time-Lapse Project
- 0-40% Model Solar System Project
- 0-40% Homework Assignments
- 0-40% Mid-Term and Final Exams

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 100% Total (must equal 100%)

Mandatory	5%
In-Class	15%
Moon Project	0%
Model SS Project	0%
Homework	40%
Exams	40%
<b>Total</b>	<b>100%</b>

Mandatory	5%
In-Class	10%
Moon Project	10%
Model SS Project	30%
Homework	10%
Exams	35%
<b>Total</b>	<b>100%</b>

**Final Letter Grade:**

The nominal scale shown here will be used to determine the final letter grades in the course from the overall cumulative percentage. A lower “curve” may be used.

- A: 90% and higher
- B: 80-89%
- C: 70-79%
- D: 55-69%
- E: below 55%

### **General Content of Course:**

- Early concepts and techniques in planetary science – 500BC to 1600AD
- The role of phases, eclipses, and transits in planetary exploration
- Modern concepts and techniques in planetary science
- Our modern understanding of solar system formation
- Sun, planets, and moons of the inner solar system
- Small bodies of the solar system
- Planets of the outer solar system
- Giant moons of the solar system
- Small satellites and rings of the planets
- Discovery and characteristics of planets around other stars
- Smart-phone astrophotography - observing the moon and planets with small telescopes

### **Course Administration:**

Class is held in the Flandrau Planetarium. Owing to the extreme darkened conditions often required in the planetarium the doors may sometimes be closed at the start of class if the projection equipment is to be used. The doors lock automatically and will not be opened until the projection equipment is finished being used. **This means don't be late!**

The course web page is maintained through D2L. Homework and other written assignments **MUST** be submitted electronically to a D2L assignment folder. The D2L folder will automatically check your work for plagiarism. Because of this plagiarism check, the vast majority of you who do your own work and cite your sources of information properly will not have to compete with students who commit plagiarism.

The Turning Technology Student Response “clickers” will be used in this class. They are available at the Student Union Bookstore.

### **Appropriate Use of Phones, Laptops, and Other Electronic Devices in the Classroom:**

Only class-related use of phones/laptops/tablets is allowed (e.g., taking notes, following D2L notes, taking pictures of slides, etc.). If your use of one of these devices for non-class related activities creates a distraction to the instructor or a student you will be asked to leave and will not be allowed to return to class until meeting with the instructor. Pending the outcome of that meeting you may be dropped from the class and reported to the Dean of Students for violating the UA Code of Student Conduct.

### **Homework, In-Class Activities, Project, and Exams:**

There will be homework assignments during the course. The assignments will be announced in class and will be available for download from the D2L web site. Solutions will be posted after assignments are turned in. To ensure fairness to all students, late homework will not be accepted after the due date/time.

We will have occasional work to be completed in-class. The type of in-class activities will vary. You may work together with a group of 2-3 students to discuss these activities, but will be expected to hand in your own work. The activities will be due at the end of the class in which they are assigned.

There will be 3 midterm exams and a final exam. The exams will cover all aspects of the course, including in-class work, homework, observing activities, and the term projects. Exams taken in the normal classroom setting will be multiple choice and allow for partial credit if more than one guess is needed to arrive at the correct answer (using the scratch-off IF-AT testing method).

The dates of the exams will be posted on the class web page and announced in class. Exhibiting suspicious behavior during an exam may result in confiscation of your exam and/or a zero for the exam grade.

The final exam will be held on the date/time designated by the registrar, as indicated at [registrar.arizona.edu/schedules/finals.htm](http://registrar.arizona.edu/schedules/finals.htm)

### **Writing Requirement:**

As this is a Tier-Two General Education course the required work is moderately writing intensive (see [gened.arizona.edu/content/writing-component](http://gened.arizona.edu/content/writing-component)). Over the course of the semester approximately 10 pages of written work will be required, distributed among homework assignments, in-class participation, and the term projects. Guidelines for the expected structure of these writing assignments will be provided, along with details on the opportunities to receive feedback on first drafts before submitting final drafts for grading.

### **Preceptors:**

Students who are interested in being preceptors for this course should meet with the instructor after the first or second day of class. Typical duties of preceptors in the past have included helping operate telescopes during evening observing sessions, providing help with homework assignments and term projects, reviewing and editing first drafts of written assignments, and holding exam review sessions. Students who qualify to be a preceptor are enrolled in a 9-week workshop through the Teaching Teams program. The preceptor duties and workshop combined are worth an additional 3 graded credits (the workshop is designated as LASC297A).

### **Alternative Exams:**

Alternative exams will be available for students who are absent either for University-approved activities (prior notice required), or due to a sudden medical condition (communication & documentation required within 24 hours). For all exams taken outside of either the scheduled exam period or the class lecture hall (e.g., at the DRC) the instructor reserves the right to use an alternative exam format from that used for the regular in-class exam. Based on previous experience many students have found this alternative format to be considerably more difficult than the regular in-class multiple-choice exam. Students registered with the DRC and requesting extra time to complete an exam will be accommodated in the normal classroom so that they can take the normal exam. Don't go to the DRC for an exam without first speaking in-person with the instructor to verify this accommodation.

### **In the Classroom:**

No food or drink is permitted in the planetarium (except for bottled water). Please arrive early enough so that we can start on time. Showing up late (and leaving early) leads to a disruption and is not fair to those students who wish to participate in the class. Of course, there are often unavoidable reasons for arriving late. If you arrive late, or must leave early, please do so as quietly as possible. Other forms of class disruption are not acceptable. The instructor may

choose to drop a student for persisting in disrupting the class using the Administrative Drop procedure.

Regular attendance is essential to do well in this course. Whether present in class or not, however, you are responsible for remaining aware of class activities and submitting assigned work on the due date.

### **Errors in Grading:**

An effort will be made to hand back material in a timely manner. Make sure to review all of your graded material as soon as possible. Occasionally errors in grading may occur. If you spot such an error, you must call it to the attention of the TA or instructor **within one week**.

### **Extra Credit:**

There will be significant opportunities for extra credit during the semester. In addition, the instructor often issues significant bonus points on the term projects for exceptional work that goes beyond the nominal requirements of the projects. The total amount of extra credit that can count towards the final overall letter grade is capped at 10% (essentially one full letter grade).

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

The UA policy concerning Class Attendance, Participation, and Administrative Drops is available at:

[catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop](http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop)

The UA policy regarding absences for any sincerely held religious customs will be accommodated where reasonable:

[policy.arizona.edu/human-resources/religious-accommodation-policy](http://policy.arizona.edu/human-resources/religious-accommodation-policy)

Absences preapproved by the UA Dean of Students (or dean's designee) will be honored. See [policy.arizona.edu/employmenthuman-resources/attendance](http://policy.arizona.edu/employmenthuman-resources/attendance)

Participating in the course and attending lectures and other course events are vital to earning a high grade. As such, class attendance is strongly encouraged. Students who are unable to attend class on days of assignment deadlines (due to illness or emergency) are required to bring documentation from their health-care provider or other relevant, professional third parties. Failure to submit documentation will result in unexcused absences.

### **Accessibility and Accommodations:**

It is the University's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let the instructor know immediately so that options can be discussed. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations. Please be aware that the accessible positions in this room should remain available for students who find that standard classroom seating is not usable. Students registered with the DRC and requesting extra time to complete an exam will be accommodated in the normal classroom so that they can take the normal exam (see Alternative Exams above).

**Honors Credit:**

As this is a Tier Two course it is available for Honors credit. Honors contract information is available at [www.honors.arizona.edu/future-students/honors-credit-across-campus](http://www.honors.arizona.edu/future-students/honors-credit-across-campus). See the instructor to discuss your ideas for an honors contract.

**Makeup Policy for Students Who Register Late:**

Students who register by the end of the second week of classes will be given an opportunity to make up missed assignments/quizzes within a reasonable time to be mutually agreed upon by the instructor and student.

**Course Communications:**

Communication will primarily be done with in-class announcements and, to a much lesser extent, through the course D2L page. If email communication with the instructor or TAs is needed please use only your official UA email address to avoid the chance of your message being rejected as SPAM.

**Required Extracurricular Activities:**

Depending on a student's choice of customizable grading scheme (see page 1), significant out-of-class activities may be required, including the term projects and homework evening observing sessions. These will be discussed in class.

**Required or Special Materials:**

Depending on a student's choice of customizable grading scheme some special materials may be needed to complete the term project. See project description for details.

**Academic Integrity:**

Both students and faculty are bound by the University's Code of Academic Integrity, which covers many forms of academic dishonesty. 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. This means that work submitted in your name must be the result of your own scholarly efforts. In this course it is typical each semester for 5-7 students to be caught plagiarizing on homework or attempting to cheat on the term project. Every such incident is reported to the Dean of Students. Don't be one of these students! Details on the code of academic integrity are available at:

[deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity](http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity)

The University Libraries have some excellent tips for avoiding plagiarism, see:

[www.library.arizona.edu/help/tutorials/plagiarism/index.html](http://www.library.arizona.edu/help/tutorials/plagiarism/index.html).

**Classroom Behavior Policy:**

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, web surfing, etc.).

This course also supports elective gender pronoun use and self-identification; rosters indicating such choices will be updated throughout the semester, upon student request. As the course includes some group work and in-class discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect.

**Threatening Behavior:**

UA policy prohibits threats of physical harm to any member of the University community. Details on the policy are available at:

[policy.arizona.edu/education-and-student-affairs/threatening-behavior-students](http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students).

**Nondiscrimination and Anti-harassment:**

The University is committed to creating and maintaining an environment free of discrimination. Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others. Details on the official UA policy are available at:

[policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy](http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy)

**Additional Resources for Students:**

UA Academic policies and procedures are available at [catalog.arizona.edu/policies](http://catalog.arizona.edu/policies).

Student Assistance and Advocacy information is available at:

[deanofstudents.arizona.edu/student-assistance/students/student-assistance](http://deanofstudents.arizona.edu/student-assistance/students/student-assistance)

**Confidentiality of Student Records:**

All student records, not just grades but also any identifiable material submitted for credit are handled according to FERPA guidelines, see [www.registrar.arizona.edu/ferpa/default.htm](http://www.registrar.arizona.edu/ferpa/default.htm)

**Subject to Change Statement:**

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