



General Education

PTYS/ASTR 206: Exploring Our Solar System

Fall 2026

Kuiper 308, TuTh 2:00– 3:15 PM

<https://d2l.arizona.edu/d2l/home/1817110>

Instructor:

Dr. Joe Schools (jschools@arizona.edu)

Kuiper Space Sciences Building, Room 237

Office Hours: TBD and by appointment (email me)

Graduate Teaching Assistant:

Katherine Gold (krgold@arizona.edu)

Chemical Sciences Building, Room 112

Office Hours: TBD

Course Preceptor (Undergraduate Teaching Assistant):

Man'f Zhuo (zhuomanf@arizona.edu)

Location TBD

Office Hours: TBD

Part 1: Course Curriculum

1.1 Course Description

Our Solar System is filled with an incredible diversity of objects. These include the sun and planets, of course, but also many hundreds of moons—some with exotic oceans, erupting volcanoes, or dynamic atmospheres. Billions of asteroids and comets inhabit the space between and beyond the planets. Each body is unique, and has followed its own evolutionary history. This class will explore our current understanding of the Solar System and emphasize similarities that unite the different bodies as well as the differences between them. We will develop an understanding of physical processes that occur on these bodies, including tectonics, impact cratering, volcanism, and processes operating in their interiors, oceans, and atmospheres. We will also discuss planets around nearby stars and the potential for life beyond Earth. Throughout the class, we will highlight the leading role that the University of Arizona has played in exploring our Solar System.

1.2 Expected Students Learning Outcomes

Student Learning Outcomes

Upon successful completion of this course students will be able to:

1. Access and use information and data from a variety of sources, including their own activities.

2. Critically evaluate this information and data for reliability in supporting fundamental concepts.
3. Effectively communicate an understanding of these concepts to their peers by synthesizing the information and data they have gathered.
4. Demonstrate practical skills with a variety of software, including Word, PowerPoint, and image/video editing apps.

Course Objectives

Students who engage with this course will develop a broad understanding of many fundamental concepts in planetary science and gain an appreciation for the discoveries and reasoning that leads to this understanding. They will learn to collect their own data as well as gather relevant supporting information from a variety of outside sources. Throughout the semester students will be demonstrating their grasp of course material by composing written assignments at a level their peers outside of the class will understand.

1.3 Course Assessment Plan

Learning Opportunities Throughout the course

This course will involve several components: 1) In-class activities, writings, and review questions based on the content, 2) a collection of written assignments (5 essays and one reflection), 3) The Signature Assignment. The schedule of written essay due dates will be announced in class and posted on the class D2L page. There will be no exams in this course.

In-class activities

Using the Top Hat platform (<https://app.tophat.com>), students will participate in the course by answering questions during the lecture. These questions include polls and rhetorical questions recorded as attendance/participation and review questions graded as correct or incorrect. At the end of the semester 5% will be added to this final grade to accommodate for unexpected absences or technical difficulties.



Essays

The five essays in this course consist of a one-page, single space response to the prompt. Each essay will include a second page using a Large Language Model AI chatbot (ChatGPT, Google Gemini, etc.) to output an answer to the essay prompt and critique its response. The format of the essays will be reviewed in class before the first essay.

One written reflection will consist of walking along the Arizona Scale Model Solar System (<https://www.lpl.arizona.edu/solarsystem>). You will document your walk with pictures, write about the scale of the vast distances of the solar system, and calculate some distance values for other objects.



Signature Assignment and ePortfolio

The Signature Assignment for this course is to propose and plan a robotic spacecraft mission to a planetary body of your choice. The final product will consist of a one-page initial proposal due in February, an outline of a final paper due in late March, a four page final paper due in late April, and a final 5-7 minute video due near the end of the semester.

Final Examination

There is no final exam for this course.

Honors Credit

As this is a GenEd course, it is available for Honors credit. Honors contract information is available at frankehonors.arizona.edu. See the instructor to discuss your ideas for an Honor contract. Please note that you must be enrolled in the W.A. Franke Honors College to take the course for Honors credit

1.4 Scheduled Topics/Activities

Scheduled lesson topics and due dates are likely to shift or change:

Due dates will be kept current on D2L

Week	Class Dates	Topic	Deliverable	Due Date *
1	8/25, 8/27	Intro/Syllabus Overview	Top Hat registration	8/28
2	9/1, 9/3	Solar System Exploration History	Essay #1	9/4
3	9/8, 9/10	Physics and Chemistry Fundamentals		
4	9/15, 9/17	Stars and Solar System Origin		
5	9/22, 9/24	Earth	Essay #2	9/25
6	9/29, 10/1	Moon	Signature Assignment Planning Report	10/2
7	10/6, 10/8	Mercury	Essay #3	10/9
8	10/13, 10/15	Venus	Solar System Scale Assignment	10/16
9	10/20, 10/22	Mars	Grade Breakdown Choice	10/23
10	10/27, 10/29	More Mars		
11	11/3, 11/5	Asteroids	Signature Assignment Progress Report	11/6
12	11/10, 11/12	Jupiter and its Moons	Essay #4	11/13
13	11/17, 11/19	Saturn and its Moons	Essay #5	11/20
14	11/24	Uranus and Neptune		
15	12/1, 12/3	Pluto, the Kuiper Belt, and the Oort Cloud	Final Paper	12/4
16	12/8	Exoplanets and Review	Final Video	12/11

*Due dates are all Fridays by 11:59 Tucson time to D2L.

Part 2: Course Information

2.1 Course Site

Course information, announcements, assignments, and grades will be posted on the class D2L page, [here](#).



2.2 Course Communications

Course announcements and other communications will be posted on the class D2L page. Important and/or

urgent communications will be sent by email. If you need to communicate with the instructor for any reason, see them before class, after class, or by sending an email to jschools@arizona.edu.

2.3 Required Resources and Equipment

- Any device (smartphone, tablet, computer) capable of word processing and has internet access, including during class time.
- Any device capable of taking still images, video, and audio (smartphone, webcam, etc.)
 - Relevant technology is available to borrow from the university's Main Library

2.4 Course Textbook

This course may include readings from the following textbook: **Introduction to Planetary Science: The Geological Perspective**. This text is available for free [here](#). You may need to be on UA Wi-Fi to access initially, but you can download it.



2.5 Student Success Resources

Please make your students aware of resources and support services. At a minimum, you may include:

- [UA Academic policies and procedures](#)
- [Student Assistance and Advocacy information](#)
- [Counseling and Psych Services \(CAPS\)](#)
- [Other student support resources](#)

Part 3: Course Policies

While UA Policies apply to all courses, most courses have some course-specific policies. This segment differentiates between policies pertaining to course progress and completion and those pertaining to the classroom climate and community engagement.

3.1 Progress and Completion Policies

Late Enrollment

Students who register by the end of the normal add/drop period will be given an opportunity to make up missed work within a reasonable time to be mutually agree upon by the instructor and student.

Absence and Class Participation

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

<https://catalog.arizona.edu/policy/class-attendance-and-participation>

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

<https://policy.arizona.edu/human-resources/religious-accommodation-policy>

Absences preapproved by the UA Dean of Students (or dean's designee) will be honored:

<https://policy.arizona.edu/employment-human-resources/attendance>

Do not attend class while ill. Temporary remote attendance can be arranged with appropriate advanced notification.

Grading

Each student designs their own customized weighting for the different components of the course from the allowed ranges listed at the right. Total weighting must add up to 100%. Each component is described in detail during class and feedback is provided on early work for each component prior to the selection deadline, which is at the end of the first 4 weeks of class. After the selection deadline passes, all grading choices are final and cannot be changed. Three examples of the many possible combinations are shown below. Please use 5% increments.

Course Component	Allowed Range
In-Class Activities	0-20%
Collection of 1-Page written Essays	30-60%
Signature Assignment	30-60%

Example 1

Activities	20%
Essays	40%
Signature	40%

Example 2

Activities	20%
Essays	30%
Signature	50%

Example 3

Activities	0%
Essays	60%
Signature	40%

The nominal scale shown here will be used to determine the final letter grades in the course from the overall cumulative percentage.

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

Late policy

For regular assignments, with no advance notice, there is a late policy of -10% per day. If you have difficulties this semester which affect your ability to meet due dates, please communicate with the teaching staff as soon as possible.

Regrades

All your work will be graded by Dr. Schools or the Graduate Teaching Assistants. Although we will make every effort to evaluate your work thoroughly and fairly, we may err. If you think there is an error in grading your homework, please contact Dr. Schools; I will look at your work again and return it to you with a response, usually within a week. **You must report any grading errors within a week of the return of your assignment to receive a regrade.**

Extra credit

There will be opportunities for extra credit during the semester. Take advantage of them when they appear because they may not be available at the end of the semester. The total amount of extra credit that can count towards the final overall letter grade is capped at 5% (essentially half a letter grade). Extra credit is possible on the Signature Assignment for exceptional work beyond the nominal requirements of the project. If you have any interesting ideas for extra credit work please tell the instructor as early in the semester as possible.

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 that 2-3 students 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:

<https://deanofstudents.arizona.edu/policies/code-academic-integrity>

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

<https://lib.arizona.edu/research/citing/plagiarism>

Use of AI tools

In this course there will be some assignments where generative artificial intelligence/large-language-models (e.g. ChatGPT, Claude, Gemini, etc.) will be used with appropriate acknowledgment and citation. Every assignment type will have a description of how AI tools are to be used or avoided. If you are in doubt as to whether you are using generative AI tools appropriately in this course, I encourage you to discuss your situation with me. Be aware that many AI companies collect information; do not enter confidential information as part of a prompt. LLMs may make up or hallucinate information. These tools may reflect misconceptions and biases of the data on which they were trained and the human-written prompts used to steer them. You are responsible for checking facts, finding reliable sources for, and making a careful, critical examination of any work that you submit.

Your written work may be shared with one or more AI-detection tools designed to predict if the text was created by a generative AI/large-language model like ChatGPT. [TurnItIn Services Privacy Policy](#) is available online.

3.2 Classroom Climate and Community Engagement

Threatening Behavior

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

<https://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:

<https://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Safety on Campus and in the Classroom

For a list of emergency procedures for all types of incidents, please visit the website of the Critical Incident Response Team (CIRT): <https://cirt.arizona.edu/case-emergency/overview>

Also watch the video available at

https://arizona.sabacloud.com/Saba/Web_spf/NA7P1PRD161/common/learningeventdetail/crtfy0000000

[00003560](#)

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:

<https://www.registrar.arizona.edu/privacy-ferpa/ferpa-compliance>

Additional Resources for Students

UA Academic policies and procedures are available at <http://catalog.arizona.edu/policies>

Campus Health

<http://www.health.arizona.edu/>

Campus Health provides quality medical and mental health care services through virtual and in-person care.

Phone: 520-621-9202

Counseling and Psych Services (CAPS)

<https://health.arizona.edu/counseling-psych-services>

CAPS provides mental health care, including short-term counseling services.

Phone: 520-621-3334

The Dean of Students Office's Student Assistance Program

<https://deanofstudents.arizona.edu/support/student-assistance>

Student Assistance helps students manage crises, life traumas, and other barriers that impede success. The staff addresses the needs of students who experience issues related to social adjustment, academic challenges, psychological health, physical health, victimization, and relationship issues, through a variety of interventions, referrals, and follow up services.

Email: DOS-deanofstudents@arizona.edu

Phone: 520-621-7057

Survivor Advocacy Program

<https://survivoradvocacy.arizona.edu/>

The Survivor Advocacy Program provides confidential support and advocacy services to student survivors of sexual and gender-based violence. The Program can also advise students about relevant non-UA resources available within the local community for support. Email: survivoradvocacy@arizona.edu

Phone: 520-621-5767

Campus Pantry

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in the course, is urged to contact the Dean of Students for support. In addition, the University of Arizona Campus Pantry is open for students to receive supplemental groceries at no cost.

Please see their website at: campuspantry.arizona.edu for open times.

Furthermore, please notify me if you are comfortable in doing so. This will enable me to provide any resources that I may possess.

Subject to Change Statement

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.