

PTYS 590: Planetary Geology Field Studies

Kuiper Space Sciences Building, Room 312: Fridays from 3:00 pm to 5:00 pm

Description of Course

This course provides students with field-based opportunities to examine the products of fundamental geologic processes and learn how these landforms and processes relate to the surfaces of other planets. In addition to making first-hand observations, each student will give a short presentation to the group. This course will involve camping and occasional moderate hiking. Students need to supply their own camping materials. Students may enroll in the course up to ten times for credit. Field trips are led by a Planetary Sciences faculty member once per semester and are assessed using SPF grading system. This semester (Fall 2022), the field trip will be five-days-long and be led by Dr. Christopher Hamilton. Students will explore the geology of the Page area of Northern Arizona, focusing on the formation the Navajo Sandstone via aeolian processes and its subsequent uplift and erosion.

Course Prerequisites or Co-requisites

The course is intended for students Department of Planetary Sciences (PTYS) Graduate Program. Students outside of PTYS must obtain consent from the Instructor prior to registering for the course. The course itself has no prerequisites. However, students will be required to undertake moderate hiking to access outcrops for field-based observations. If there are any reservations or concerns regarding such hikes, students should contract the Instructor. Participation in the field trip is required to obtain a passing grade of S or P.

Instructor and Contact Information

Instructor: Dr. Christopher Hamilton

Instructor's Office Location: Kuiper 430

Instructor's Telephone Number: +1-301-305-3818

Instructor's E-mail address: chamilton@arizona.edu

Office Hours: By Appointment

Course Website: "Desire2Learn" (D2L)

Course Format and Teaching Methods

Course information will be made available through D2L with planning sessions held prior to the field trip on August 26 and September 2 (in Room 312). During the first two classes, we will decide on specific dates for the field trip, but given weather conditions, mid- to late-October is preferred. Student research topics will also be posted and students are expected to complete a research report prior to leaving for the field and present the report during the field trip. Students are also expected to take field notes to document their observations of relevant geological outcrops. Field notebooks will be graded.

Course Objectives

The objective of the course is for students to develop skills related to geological observation and description. Additionally, students will link their understanding of terrestrial geology with the remote sensing of planetary surfaces to develop an improved understanding of geological,

geophysical, and geochemical processes relevant to the study of planetary bodies.

Expected Learning Outcomes

Students will be able to develop research plans and test their own hypotheses related to geology and paleo-environments. Students will be able to create geological descriptions using field-based techniques and advanced methods of measurements. Students will be able to develop connections between fundamental geological surface processes operating on Earth—such as sedimentology, tectonics, and processes of weathering and erosion—and analogous processes operating on other planetary bodies to understand their similarities and differences. Students will also be able to develop their communication skills by presenting scientific information to their peers.

Absence and Class Participation Policy

Assignments are due at the beginning of class on (or before) the due date. If an assignment is due, you are responsible for turning it in, even if you are absent from class. Late work will generally not be accepted without preapproval from the Instructor. Absences for university-approved activities for which you have in advance a note of dean's approval will be excused, or other arrangements will be made. If you will be absent due to a religious holiday, please let me know in advance. Absences for other reasons will not be excused unless special dispensation was received prior to the deadline.

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, see:

<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>

Participating in the course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all lectures and discussion section meetings. Absences may affect a student's final course grade. If you anticipate being absent, are unexpectedly absent, or are unable to participate in class online activities, please contact me as soon as possible. *To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or drc-info@email.arizona.edu.* If you are experiencing unexpected barriers to your success in your courses, the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office is located in the Robert L. Nugent Building, room 100, or call 520-621-7057.

COVID-19:

- If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel.
- Notify your instructor(s) if you will be missing a course meeting or an assignment deadline.
- Non-attendance for any reason does **not** guarantee an automatic extension of due date or rescheduling of examinations/assessments.
- Please communicate and coordinate any request directly with your instructor.

- If you must miss the equivalent of more than one week of class, you should contact the Dean of Students Office DOS-deanofstudents@email.arizona.edu to share documentation about the challenges you are facing.
- Voluntary, free, and convenient [COVID-19 testing](#) is available for students on Main Campus.
- COVID-19 vaccine is available for all students at [Campus Health](#).
- Visit the [UArizona COVID-19](#) page for regular updates.

Class Meeting Format:

The first and second meeting will be conducted in Room 312 of the Kuiper Space Sciences Building on August 26 and September 2, respectively.

Makeup Policy for Students Who Register Late

Students registering late for the course will have the opportunity to select a field trip topic after September 2, but their reports must be submitted one-week before the field trip departure date in October to enable sufficient time for editing and binding of the materials into the course workbook.

Course Communications

Lectures, homework assignments and general information related to the course will be available online on the following class websites:

The University of Arizona's D2L Website: <https://d2l.arizona.edu/d2l/loginh/>

Announcements will also be sent through the D2L website, so please ensure that you regularly check emails sent to your address registered with D2L.

Required Texts or Readings

There are no required texts, but students are expected to conduct independent readings to research their field trip report. These readings should include peer-reviewed sources of information with appropriate references.

Required or Special Materials

Field books, hand lenses, hand-held global positioning systems (GPS) and other educational materials required for the field will be provided.

All other materials (e.g., camping equipment) will not be provided, and are the student's responsibility to obtain.

Required Extracurricular Activities

Participation in the field trip to the Page area of Northern Arizona is required. Students are also encouraged to complete High Occupancy Vehicle (HOV) training prior to the field trip. Students who have completed this training and volunteer for additional responsibilities (e.g., driving or formatting the field trip guide) will be eligible for a Superior (S) pass.

Assignments and Examinations: Schedule/Due Dates

Research Report: Students are expected to prepare a 3–5 page report related to their choice of topic prior to the field trip. A list of suggested topics will be posted on D2L on Friday, September 2. However, students are also encouraged to propose their own topic (with instructor approval).

Completed reports are due on or before class, one week before the field trip departure in October.

Report Presentation: The field report will be presented by in the field by each student are expected to be 10 minutes in length.

Alternative Report/Presentation Formats: If a student faces challenges in meeting course requirements, please contact the instructor for an alternative assignment.

Field Notebooks: Field notebooks will be collected and evaluated at the end of the field trip.

Policy on revision and resubmission of assignments: Late assignments will not be accepted.

Final Examination or Project

This course does not have a final examination, but it does include a final project, which is due on or before class one week before departure in October.

Grading Scale and Policies

Grading for this course will be: S, P, F (Superior, Pass, Fail) based on:

Field Trip Report	50%
Field Trip Presentation	25%
Field Notebook	25%

Grades are assigned as follows: $S \geq 90\%$, $90\% > P \geq 50\%$, and $F < 50\%$.

Note: All assignments will be graded by the Instructor; students must participate in the field trip to obtain a passing grade; and late work will generally not be accepted. See "Absence and Class Participation Policy" Section for more details.

Requests for incomplete (I) or withdrawal (W)

Requests must be made in accordance with University policies, which are available at:

<http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete>
<http://catalog.arizona.edu/policy/grades-and-grading-system#withdrawal>

Scheduled Topics/Activities

Friday, August 26:	Introduction and initial planning meeting.
Friday, September 2:	Final logistical planning meeting.
October (one-week before departure):	Field reports due.
October (5 days, 4 nights):	Field trip.
Friday, November 4:	Post-trip discussion.

Note: If possible we will have an invited speaker from the Navajo Nation come to class in September to provide a cultural context for the field locations.

Bibliography

Suggested reading materials will be posted electronically on the D2L website.

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, making phone calls, web surfing, etc.). Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture and may be reported to the Dean of Students.

Some learning styles are best served by using personal electronics, such as laptops and tablets. These devices can be distracting to other learners. Therefore, students who prefer to use electronic devices for note taking should do so in a fashion that is respectful to others.

Additional guidelines for expected behavior will be included in the field trip guide.

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>

Accessibility and Accommodations

At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the Disability Resource Center (520-621-3268, <https://drc.arizona.edu/>) to establish reasonable accommodations.

Code of 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>.

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

<http://new.library.arizona.edu/research/citing/plagiarism>.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

UA Nondiscrimination and Anti-harassment Policy

The University of Arizona is committed to creating and maintaining an environment free of discrimination; see:

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

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.

Academic advising:

If you have questions about your academic progress this semester, please reach out to your academic advisor (<https://advising.arizona.edu/advisors/major>). Contact the Advising Resource Center (<https://advising.arizona.edu/>) for all general advising questions and referral assistance. Call 520-626-8667 or email to advising@arizona.edu

Life challenges:

If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful.

The [Dean of Students Office](#) can be reached at (520) 621-2057 or DOS-deanofstudents@email.arizona.edu.

Physical and mental-health challenges:

If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520) 621-9202. For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.

Additional Resources for Students

UA Academic policies and procedures are available at:

<http://catalog.arizona.edu/policies>

Student Assistance and Advocacy information is available at:

<http://deanofstudents.arizona.edu/student-assistance/students/student-assistance>

Confidentiality of Student Records

<http://www.registrar.arizona.edu/personal-information/family-educational-rights-and-privacy-act-1974-ferpa?topic=ferpa>

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.