



# GEOS218: Geological Disasters and Society (Online)

## Section 001

**Recorded Lectures on Panopto (through D2L): Available weekly (usu. Monday am)**  
**Live Office Hours on Zoom and special events as needed**  
**Exams at set Days/Times (4 options per exam) on D2L**

**Notice:** It is our intention to make this class as accessible as possible with the intent that **the safety and health of the students and the teaching team is paramount**. We are offering **maximum flexibility**, including, but not requiring, in-person participation. **All students can participate live or remotely, synchronously or asynchronously, as needed. Please see the Pandemic Modality section below.**

## Description of Course

Catastrophic and hazardous earth processes (earthquakes, volcanism, severe weather, hurricanes, climate change, etc.) are important in shaping the Earth. This course will acquaint students with the scientific principles governing these processes and also to consider their impact on society.

## Course Prerequisites

This is a Tier 2 NATS course, to be completed after a Tier 1 NATS course.

## Instructor and Contact Information

Instructor: Paul Goodman  
Department of Geosciences  
Gould-Simpson 305  
Office Hours: In-person & Online – see D2L

Teaching Assistants: Julia Manobianco                      juliamanobianco@email.arizona.edu  
Department of Geosciences  
Gould-Simpson 330  
Office Hours: On Zoom, Thursdays 2-3pm – see D2L

**Class Website:** <http://d2l.arizona.edu> (D2L)

## Land Acknowledgement

The University of Arizona sits on the original homelands of Indigenous Peoples who have stewarded this Land since time immemorial. Aligning with the university's core value of a diverse and inclusive community, it is an institutional responsibility to recognize and acknowledge the People, culture, and history that make up the Wildcat community. At the institutional level, it is important to be proactive in broadening awareness throughout campus to ensure our students feel represented and valued.  
<https://nasa.arizona.edu>

## Wearing Masks (Required Text):

**Students, employees and visitors are required to wear a face covering that covers the nose, mouth and chin in all indoor shared spaces on all UArizona campuses** including formal learning spaces (e.g., classrooms, laboratories, studios, etc.), informal learning spaces (e.g., libraries, study rooms, etc.), offices (e.g., administrative offices, academic advisor offices, etc.), and in auxiliary facilities (e.g., Student Union, Bookstore, Campus Rec., Bursar's Office, Residence Halls, etc.). **They are also required to wear a face covering while in all UArizona outdoor spaces where continuous physical distancing of at least six feet is difficult or impossible to maintain.**

## Pandemic Modality and Resources:

This class will be taught in the **LIVE ONLINE** modality, with mostly asynchronous options.

- **Lectures will be recorded and will be made available through D2L and Panopto for asynchronous viewing on a weekly basis.**
- **“Attendance”** will be recorded by completing short review quizzes for each lecture on D2L weekly.
- **Assignments** will be submitted through D2L
- **Exams** will be administered through D2L with several different day/time options for each exam.
- **Office Hours** will be Live on Zoom – see D2L for up-to-date days/times and links
- **Staying current:** All students are expected to keep up with **weekly** lectures and assignments
  
- **Academic advising:** If you have questions about your academic progress this semester, or your chosen degree program, please note that advisors at the Advising Resource Center can guide you toward university resources to help you succeed.
- **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.
- **Remain flexible:** If pandemic conditions warrant, the University may require that we return to remote operations. If that is the case, we will notify you by D2L Announcement and email that we are moving back to remote operations.
- **Remote/online only after Thanksgiving:** After the Thanksgiving holiday, we are scheduled to move back to remote teaching. That means that we will meet by Zoom for the last lecture and the last Exam.
  
- **In-person teaching: there is NO in-person attendance required for this course.** The following is included per request of the College of Science:
  - **Face coverings are required in classrooms:** Per UArizona’s Administrative Directive, **face coverings that cover the nose, mouth, and chin are required to be worn in all learning spaces** at the University of Arizona (e.g., in classrooms, laboratories and studios). University policy on face masks can be found at: <https://covid19.arizona.edu/face-coverings>
  - **Classroom attendance:**
    - 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.
    - Campus Health is testing for COVID-19. Please call (520) 621-9202 before you visit.
    - Visit the UArizona COVID-19 page for regular updates.

## **COURSE OBJECTIVES**

Our *course objectives* are to:

- Use geologic concepts and principles to demonstrate a working knowledge of earth processes in order to educate students about the underlying natural process that give rise to natural hazards such as earthquakes, volcanic eruptions, tsunamis, floods, and more.
- Understand how society evaluates and confronts the dangers posed by these natural processes in order to minimize the costs (both life and property) to society when they do occur.
- Expose students to the technological innovations that allow an increasingly large human population to monitor, predict, and warn society about natural hazards and mitigate disasters, both before and after they occur.
- Examine how modern human society has caused changes on a global scale that affect the frequency and magnitude of natural disasters, and how we might assess and mitigate these outcomes

## **EXPECTED LEARNING OUTCOMES**

Upon successful completion of this course, you will be able to:

- Explain the differences between hazards and disasters
- Discuss the causes of different natural disasters and how they arise within the context of a larger understanding of geological processes, like plate tectonics and climate.
- Assess the relative risks associated with natural disasters and how society reduces these risks
- Characterize how different locations are more or less prone to different types of hazards
- Describe significant historical disasters and how they've shaped our planning
- Gather and assess information from maps and other data visualization tools

## **GOALS:**

Our main goals for this class are to:

- give you a sound physical understanding of the causes, likelihoods and risks associated with geological disasters
- inform you about how geological disasters can affect your daily life so that you become better informed citizens
- inform you about how society plans for disasters, mitigates their potential effects, and responds after a disaster occurs
- help you do well in this course
- facilitate your success as a student at the University of Arizona

## **RESPONSIBILITIES/WHAT WE EXPECT**

Unlike in-person classes where we would see each other two or three times a week, this Online course will function a bit differently, especially with regard to announcements and the usual preparation for upcoming material, assignments and short-term opportunities. It is your responsibility to:

1. Lectures for the week will generally be posted every Monday by 12 noon in the Content Section on D2L: watch them sooner rather than later.
2. It is ***strongly recommended*** that you read the associated chapter in the Abbott textbook. You are expected to understand what is in each chapter, although exam and quiz questions and homework assignments will focus on material discussed in lecture.
3. Complete the online assignments, homeworks, quizzes and writing assignments and/or post them to the appropriate Dropbox in D2L by the assigned due date posted in the schedule.
4. In order to get credit for viewing lectures (attendance), you must complete the associated online lecture assessments by 5pm on Monday of the following week – see the schedule for specifics.
5. Bring your questions and concerns to our attention by posting to the discussion groups or attending the in-person office hours.
6. Be polite and respectful of your peers and the teaching team when communicating via email or through the discussion forums.
7. DO YOUR OWN WORK – avoid the appearance of cheating. We take this very seriously and will report any incidents.
8. Have fun! Contact us if you want more out of the class and we'll see what we can do.
9. **IMPORTANT NOTE:** Lecture recordings may only be used at the discretion of the instructor. Students must access content through D2L only. Students may not modify content or re-use content for any purpose other than personal educational reasons. All recordings are subject to government and university regulations. Therefore, students accessing unauthorized recordings or using them in a manner inconsistent with UArizona values and educational policies are subject to suspension or civil action.

## **Course Format and Teaching Methods:**

This course is taught **asynchronously**. Material is delivered in lectures as powerpoint presentations, animations, video and movie segments. Assignments, homework and quizzes will be available through and submitted through D2L into the appropriate Dropboxes. We will make a discussion group available for routine questions and the TA and Instructor are available during their office hours.

## **ONLINE LECTURES**

- Lectures for the week are recorded will be made available on D2L by 12 noon each Monday.
- The online video lectures will generally present material in a similar format to an in-class lecture with powerpoint slides and explanations, including frequent video clips, and animations.
- Short, online, lecture assessment questions (2-4 each) are assigned to ensure that the material is understood. These lecture assessments are loosely graded, and you will have the opportunity to review the material and retake each assessment if you wish. There is no reason not to get a perfect score for each lecture assessment.
- The recording will include me speaking, the lecture powerpoint, and any additional material included in the lecture
- Lecture slides are posted to D2L **after** each lecture.

## **ONLINE OFFICE HOURS**

Regularly scheduled online office hours will be posted on D2L. We will also monitor the Discussion Forums and add any clarifications and or corrections as are needed. We will also be happy to answer any questions over email. If necessary, additional material and/or lectures may be posted for clarification purposes.

## **Technology Needs/Requirements**

Please inform us of any technology issues that may impede your participation in the course as early in the semester as possible. These could include slow internet speed (so as not to be able to access class material synchronously) and lack of computing equipment/accessories. See information at this link: <https://student.it.arizona.edu/resources>. See also University of Arizona Wifi description: <https://it.arizona.edu/service/uawifi>.

In addition, the OSCR lab provides equipment as needed (<https://oscr.arizona.edu/content/covid19>) or can point you to in-person computing resources. You will need to have an up-to-date browser, operating system and some additional software on your computer to take this class. Some material will be delivered as word documents, powerpoint files and/or PDF files: the appropriate software is freely available to all UA students at <http://softwarelicense.arizona.edu/students>.

## **Absence and Class Participation Policy**

- To do well in this course, you should watch all of the lectures and take careful notes! This will provide you with the information you need to do well on homework assignments and exams.
- All material presented in lecture or as part of a homework assignment is fair game for the exams.
- **Attendance** will be established by completing the "lecture assessment" on [D2L](#) associated with each lecture (see the LECTURE ASSESSMENTS section below).
- 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>

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

Our late policy is a 20% reduction in grade for assignments submitted less than 48 hours late and 50% reduction in grade after that.

## **Recommended Text (*Strongly Recommended*)**

The textbook below is excellent and readings for each unit are included in the schedule. However, exams, assessments, quizzes and homework are based on material shown in lecture, not solely in the text. Most students find the text book useful in supplementing information presented during lecture

- ***Natural Disasters, Patrick L. Abbott, (10<sup>th</sup> or 11<sup>th</sup> Editions) ISBN 978-0078022982***

## **DISCUSSION FORUMS:**

We will make available discussion forums to facilitate communication between students and promote peer-to-peer learning. If you have a question, ask. No question is too simple. We encourage you to answer any questions from your peers that you feel comfortable addressing – **the best way to learn something is to teach it to someone else**. We will monitor the forums for content and to correct imprecise or erroneous answers. Please note that all communication in this class is open to everyone, so be polite and respectful of your peers and the teaching team (see next section).

### **NETIQUETTE:**

In an online classroom, our primary means of **communication is written**. The written language has many advantages: more opportunity for reasoned thought, more ability to go in-depth, and more time to think through an issue before posting a comment. However, written communication also has certain disadvantages, such a lack of the face-to-face signaling that occurs through body language, intonation, pausing, facial expressions, and gestures. As a result, **please be aware of the possibility of miscommunication, give people the benefit of the doubt, and compose your comments in a positive, supportive, and constructive manner**.

For this course, **you agree to interact with others in a positive, cooperative and supportive manner and display respect for the privacy and rights of others**. We do not expect any difficulties, but any inappropriate, rude or hostile communication will result in loss of privileges and may be subject to sanctions, up to and including failing the course and being reported to the Dean's Office. If you see ***inappropriate material*** in any of the discussion forums, please let us know immediately.

### **Scheduled Topics/Activities**

See the Schedule on D2L under Content

### **Graded Work**

- **All assignments will be turned in to the appropriate Dropbox on D2L**
- Grades will be available through D2L.
- All grades will be entered into D2L within one week of the due date – please do not ask about your grade before the week is up.
- Comments on graded material will be available through D2L.
- Please note the due date for each assignment: we encourage you to get your assignments in early as possible.
- **Please make sure you do your own work on each assignment.** It is fine to work with others, but the information you write down must be in your own words and in your own format. **Identical papers (content & format) will receive zero credit.** Repeat offenders of this policy will be reported to the Dean (see CHEATING section below).
- **Late assignments will be accepted, but docked by 20% up to 2 days and 50% after that.**
- If you do not have a grade or are unhappy with your grade – please contact us so we can address your concerns. University policy regarding grades and grading systems is available at <http://catalog.arizona.edu/policy/grades-and-grading-system>.

### **EXAMS** (30% of your total grade)

- Five 50-minute exams will be given during the semester, **four midterms**, and a **cumulative final**. Your four highest scores will count - i.e. we will drop your lowest exam score, including the final.
- **The dates of the exams are fixed, please adjust your schedule accordingly.** If you must miss an exam for a valid reason, please let Paul know as soon as possible – we will try to accommodate you, but we do drop one exam.
- **Exams will be given over D2L**, and there will be several opportunities to take each exam
- Each of the four midterm exams focuses on material since the previous exam.
- Exams will emphasize a general understanding of the topics, rather than an ability to memorize small details. Slides, diagrams, and videos shown in class or on the homework are commonly used during exams! Format will consist of about 20-30% written answers or labelling diagrams, and about 70-80% multiple-choice questions.
- To help you prepare for the exams, a brief study guide and an exam from a previous semester will be available on the class web site.

- **\*IMPORTANT\*** Students requiring accommodations should plan to take their exams at the DRC.

### **HOMWORK** (15% of your total grade)

There will be 7 homework assignments during the semester. These assignments emphasize material that will be on the exams. Homework will be submitted to the appropriate Dropbox on D2L. The due date for each Homework is posted in the Schedule. Late submissions will be docked by 20% if received within 2 days of the due date, and by 50% after that. We will drop your lowest score.

#### **How to submit your homework assignments:**

- Homework will be delivered as both .docx and .pdf files. You may annotate the electronic files with your answers and then **upload to the appropriate Dropbox**. Or the assignments may be printed out, completed, and then scanned or photographed (make sure that the scan/photo is legible and you include all of the pages) **and then uploaded to the appropriate Dropbox**.

### **WRITING ASSIGNMENTS** (15% of your total grade):

There will be 3 writing assignments during the semester. These assignments fulfill a large part of the University of Arizona General Education writing requirement related to the development of various writing strategies, such as focusing ideas, drafting, revising, critical reading, and research using outside sources (<http://gened.arizona.edu/content/writing-component>). These assignments emphasize material that will be covered on the exams. Writing assignments will constitute 15% of your grade; the due dates for each assignment are posted in the Schedule. Late submissions will be docked by 20% if received within 2 days of the due date, and by 50% after that. You will have the opportunity to revise and resubmit each writing assignment (but you will NOT be able to earn back points taken away for a late submission).

### **QUIZZES** (10% of your total grade)

There will be 4 online quizzes during the semester. Each will consist of 10 multiple-choice and/or true/false questions. **We will drop your lowest score**. Questions on the quizzes will be similar to questions on upcoming exams.

### **ONLINE LECTURE ASSESSMENTS (ATTENDANCE, 30% of your total grade):**

- There will be a 2-4 question lecture assessment associated with each lecture (i.e. attendance).
- These questions are designed to ensure understanding of the main concept(s) in each lecture.
- Lecture assessments must be completed by **Monday at 5pm of the following week**.
- You will receive instant feedback on these questions and we encourage you to review the material and try the question again if you don't get it the first time. **There is no reason not to get full credit on every assessment since you can take each one over until you get a perfect score.**
- You will be graded on your 25 highest assessment scores, so there are no makeups.

### **EXTRA CREDIT** (Up to 5% of your grade)

There will be several opportunities to earn extra credit during the semester, 4 of which are described below. **You will be allowed to earn up to 5% total extra credit**, where each extra credit point is added to your final grade. Opportunities are as follows:

- **Help us get to know you** (1%): We would like to get to know you this semester. Help make this happen by giving us a mug shot and telling us a bit about your background and interests -- use the form on the web page. Be sure to attach a photo that shows your face. Please submit the form to the appropriate Dropbox by **Friday 9/4 at 5pm**.
- **Video/Powerpoint Presentation** (2%, only one presentation per person): This is an opportunity to earn extra credit by presenting non-traditional geologic information to the class. Your presentation could be (1) a slide show in which you describe the setting and events of a geologic disaster you experienced first-hand, (2) a 3-5 slide summary about a famous natural disaster (e.g. Great San Francisco Earthquake of 1906, Hurricane Sandy, Krakatoa, etc.), (3) a public service announcement on disaster preparedness, (4) a 3-5 slide powerpoint on new construction materials or techniques designed to protect people and structures from tornadoes, etc. *Almost* anything goes!! **A powerpoint presentation must include your narration, either embedded or as a transcript**. Note that **we need to approve your idea beforehand** – no credit will be given without prior approval of the subject matter. You should submit the PPT and the video file and/or

the link to access it (on Panopto or Youtube is fine) to the Dropbox by **Monday, 12/7 at 5pm**. You make work with up to one other person, but each of you must be seen and/or heard for credit.

- **Disasters in Hollywood** (1%, only one per person): watch a movie that features a geological disaster (earthquake, volcanic eruption hurricane, tornado, flood, radical climate change, etc.). Describe the geologic setting of the event portrayed, the likelihood of the scale of event shown happening in reality, and assess the "believableness" of the impacts on people and property portrayed. Your report should be about 1 page in length: the text of your report should be ~2/3 of a page (12-point font, single-spaced), and you should include a figure (hand-drawn, covering 1/3 page) describing this type of disaster. This extra credit is due into the Dropbox by **Monday, 12/7 at 5pm**.
- **Extra activities** (1% each): there will be several on-line movies describing various geological disasters that will be viewed during the semester. For some of these, we will offer extra credit for a summary, answering a few questions and/or a little bit of further research.
- **Extra Participation** (1%): if you complete 30 or more lecture assessments, we will add an additional 1% to your final grade.

## Grading Scale and Policies

Exams will make up 30% of your grade, homework will make up 15% of your grade, writing assignments will make up 15%, quizzes will make up 10% of your grade, and lecture assessments will make up 30% of your grade. You may also earn up to 5% in extra credit during the semester.

### Grades are rounded A, B, C, D and E:

A =  $\geq 89.5\%$ ; B = 79.5% to 89.4%; C = 69.5% to 79.4%; D = 59.5% to 69.4%; E =  $\leq 59.4\%$

**Every point counts!** We will NOT adjust your grade at the end of the semester if you miss the cutoff by 0.1%, so please don't ask!

**Requests for incomplete (I) or withdrawal (W)** must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

### Dispute of Grade Policy:

It is **YOUR** responsibility to address grading concerns promptly. We will post grades to D2L and return materials to you within one week of the due date or exam date. You then have one additional week to retrieve your graded material and make sure that the grade on the paper matches the grade posted in D2L. If no grade is posted, it is our assumption that you did not hand in the assignment, so it is your responsibility to let us know if we are in error.

**Requests for incomplete (I) or withdrawal (W)** must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

## Honors Students

Honors students can earn Honors credit in this course by signing and fulfilling the requirements of an Honors Contract. The main requirement is generally to do outside research into one particular kind of disaster of your choosing (tornadoes, landslides, hurricanes, earthquakes, tsunamis, flooding, etc.) and prepare a 10-15 minute presentation toward the end of the semester, although other Contracts will be considered. Please contact P. Goodman for further details before Sept. 4, 2020.

## Accessibility and Accommodations

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 or pregnancy, 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>.

If you have reasonable accommodations, please plan to meet with Joellen or Paul by appointment or

during office hours to discuss accommodations and how these course requirements and activities may impact your ability to fully participate.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

**If at any time you are not doing as well in the class as you should be, please seek some advice!**

## **Inclusiveness, Diversity, Equity**

- Inclusive Excellence is a fundamental part of the University of Arizona's strategic plan and culture. As part of this initiative, UA embraces both the principles and the practices of diversity and inclusiveness. These values are expected, respected and welcomed in this course. See <https://diversity.arizona.edu/>
- The University recognizes that many members of its community use names other than their legal or official names first provided to the University (official/legal name) to identify themselves. For some, a chosen or preferred name may be an important component of their identity, especially their gender identity. If you would prefer that a different name from your legal one or the one that appears on the class roster be used in our classroom, please email us, so that we can use the best name and pronouns for you. As the course includes group work and in-class discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect.
- University of Arizona students and employees may choose to identify themselves within the University community using a preferred first name that differs from their official/legal name. A student or employee's preferred name will appear instead of the person's official/legal name in select University-related systems and documents, provided that the preferred first name is not being used for the purpose of misrepresentation. Please see the following link for more information: <http://lgbtq.arizona.edu/use-chosen-or-preferred-names>

## **Title IX**

- The University of Arizona is committed to removing educational barriers created by sex discrimination and sexual harassment. Sex discrimination under Title IX can include acts of violence based on sex, such as sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these incidents, you have options for help at the University. The University of Arizona has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.
- Please be aware that UA faculty and instructors who work with students are required to report allegations of sex discrimination to the Title IX Office. This means that if you tell me about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking that involves another student or employee, or that happens on campus or in a UA program, I **must** share that information with the Title IX Coordinator. Although I have to make that notification, *you will have choices* regarding whether or not you want to pursue a formal complaint against anyone on campus. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need.
- If you wish to speak to someone privately, you can contact the on-campus resources listed below.

## **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>
- Office of Diversity (<http://diversity.arizona.edu/>)
- Campus Health Counseling and Psych Services: <http://www.health.arizona.edu/counseling-and-psych-services>
- Campus Health OASIS Sexual Assault and Trauma Services: <http://www.health.arizona.edu/oasis-sexual-assault-and-trauma-services>
- Campus Health, <https://health.arizona.edu/home>, (520) 621-6490
- University of Arizona Ombuds, <https://ombuds.arizona.edu/>, (520)-626-5589

- Title IX section on sexual assault support & resources (<https://titleix.arizona.edu/title-ix/sexual-harassment-violence>) has more information, as well as a link explaining options if you have a concern, need assistance/support, or would like to file a complaint.

## **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](http://campuspantry.arizona.edu) for open times.

## **Notification of Objectionable Materials**

Although unlikely, this course may contain material of a mature nature, which may include explicit language, depictions of unsettling animal behaviors and/or violence, and/or human cruelty. The instructor will provide advance notice when such materials will be used. Students are not automatically excused from interacting with such materials, but they are encouraged to speak with the instructor to voice concerns and to provide feedback.

## **Code of Academic Integrity**

### ***Policies of the University of Arizona***

See <http://deanofstudents.arizona.edu/codeofacademicintegrity> for the complete policy.

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.

Violations of the UA Code of Academic Integrity are serious offenses at the University of Arizona. As your instructor, I will deal with alleged violations in a fair and honest manner. As students, you are expected to do your own work and follow class rules on all tests and assignments unless I indicate differently. Alleged violations of the UA Code of Academic Integrity will be reported to the Dean of Students Office and may result in sanction(s) (i.e., loss of credit on assignment, failure in class, suspension, etc.)

### ***Policies of the Department of Geosciences, University of Arizona***

1. Underlying Principle: Unless specified in the assignment, all work and all words used to describe the results of an assignment must be the student's own. No material, whether paragraphs, sentences or phrases may be copied from another student or from any external source. External material that is used, usually for a specific reason, must be accompanied by a citation of the source.
2. Individual Assignments: In some cases, students will be told that no conferring is allowed; if that is the case, students must not discuss their work with others, or show others their work. More often, Geosciences faculty will encourage discussion among students, because this facilitates learning. In such a case, any ideas and concepts may be discussed openly, but the student is still responsible for his/her own work turned in for grading. Identical paragraphs, sentences, phrases, or notations on a map/illustration cannot be used by two or more students. The best way to avoid this is for

students to discuss the assignment, but then separate from each other in order to produce the work to be turned in for grading, and not share electronic files using e-mail, flash drives or other methods.

3. **Group Assignments:** Geosciences faculty routinely give two kinds of group assignments. Category 1 is a group assignment where students work in parallel on the same material (for instance a mapping exercise), but then turn in individual work for grading. Discussion is encouraged, but it is essential that each student do the written or map work individually first, after which ideas may be exchanged and interpretations modified before the work is graded. Copying of another's work is prohibited, and this can be avoided in the same way as for individual assignments. Category 2 is a group assignment where students work explicitly as teams, perhaps with each member performing parts of a complex task (such as a geophysical or analytical experiment), and a combined product will be graded with equal scores for all members of the team. In this case, full discussion of the work, before any write-up takes place, is expected. The instructor will inform students whether a group assignment is Category 1 or 2.
4. **Reporting of Cheating:** All incidents of cheating or plagiarism, including facilitating of same, will be reported to the Dean of Students' office and the College of Science. As well as the violations in take-home or field assignments detailed above, this will include any violations during quizzes and exams. The University's procedure and forms give students an opportunity to explain to the instructor, and to comment upon (or rebut) any accusations in writing before the forms are turned in. But the forms can be turned in, reporting the cheating incident, even if the student fails to meet with the instructor or does not countersign the paperwork.
5. **Expectation of Student Integrity:** Instructors in the Department of Geosciences set a high standard for themselves as educators, and they expect that students, both in general education and majors' classes, will do the same for their own education. Thus cheating and plagiarism will not be tolerated.
6. **UA Code of Academic Integrity:** The above policies are a statement of what students and faculty should expect within Department of Geosciences, or in general education courses offered by the Department. It does not replace the UA's Code of Academic Integrity (see next section).

## **Disruptive Behavior Policy**

### ***UA Policy on Disruptive Behavior In An Instructional Setting:***

See <http://deanofstudents.arizona.edu/accountability/disruptive-student-behavior> and <http://policy.arizona.edu/education-and-student-affairs/disruptive-behavior-instructional-setting> for the complete policy.

- **Disruptive Behavior is Prohibited:** "Disruptive behavior" means conduct that materially and substantially interferes with or obstructs the teaching or learning process in the context of a classroom or educational setting. Disruptive behavior includes conduct that distracts or intimidates others in a manner that interferes with instructional activities, fails to adhere to an instructor's appropriate classroom rules or instructions, or interferes with the normal operations of the University.
- 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 or discussion and may be reported to the Dean of Students.

## **Threatening Behavior Policy**

### ***UA Policy on Threatening Behavior By Students:***

See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students> for the complete policy.

- **Threatening Behavior is Prohibited:** "Threatening behavior" means any statement, communication, conduct or gesture, including those in written form, directed toward any member of the University community that causes a reasonable apprehension of physical harm to a person or property. A student can be guilty of threatening behavior even if the person who is the object of

the threat does not observe or receive it, so long as a reasonable person would interpret the maker's statement, communication, conduct or gesture as a serious expression of intent to physically harm.

- The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself.

## **UA Nondiscrimination and Anti-harassment Policy**

### ***UA Policy on Nondiscrimination and Anti-harassment***

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

- 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 want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

## **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 (This version is dated 8/20/20)**

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.

## Schedule for GEOS218: Geological Disasters & Society, Fall 2020

(Subject to minor revision – last revised 8/21/20)

**Lectures for each week will generally be released on Monday by 12 noon (Tucson time, MST)**

**Lecture Assessments will generally be due the following Monday afternoon by 5pm.**

**Homework & Writing Assignments will be due on Friday afternoons by 5pm**

<i>Unit 0: Introduction</i>	Week 1 (Aug 24-28)
Reading: Abbott, Chapter 1	
Assessment: <b>NONE</b>	
<i>Unit 1: Natural Hazards &amp; Disasters, Frequency vs Magnitude</i>	Week 1 (Aug 24-28)
Reading: Abbott, Chapter 1	
Assessment: Unit #1	Due Monday, 8/31, 5pm
<i>Unit 2: Formation of the Earth and Solar System, Layered Earth</i>	Week 1 (Aug 24-28)
Reading: Abbott, Chapter 2	
Assessment: Unit #2	Due Monday, 8/31, 5pm
<i>Unit 3a: Plate Tectonics: Overview, History, Evidence</i>	Week 2 (Aug 31-Sept 4)
Reading: Abbott, Chapter 2	
Assessment: Unit #3a	Due Tuesday, 9/8, 5pm
<i>Unit 3b: Plate Tectonics: Plates, Boundaries, Creation/Destruction</i>	Week 2 (Aug 31-Sept 4)
Reading: Abbott, Chapter 2	
Assessment: Unit #3b	Due Tuesday, 9/8, 5pm
<b>Homework #1</b>	<b>Due Friday, 9/4, 5pm</b>
<i>Unit 4a: Earthquakes: Basics, Terminology &amp; Faults</i>	Week 2 (Aug 31-Sept 4)
Reading: Abbott, Chapter 3	
Assessment: Unit #4a	Due Tuesday, 9/8, 5pm
<i>Unit 4b: Earthquakes: Seismology</i>	Week 2 (Aug 31-Sept 4)
Reading: Abbott, Chapter 3	
Assessment: Unit #4b	Due Tuesday, 9/8, 5pm
<i>Unit 5a: Earthquakes: Magnitude vs Intensity</i>	Week 3 (Sept 7-11)
Reading: Abbott, Chapter 3	
Assessment: Unit #5a	Due Monday, 9/14, 5pm
<i>Unit 5b: Earthquakes: Damages (From EQs/From Buildings)</i>	Week 3 (Sept 7-11)
Reading: Abbott, Chapter 3	
Assessment: Unit #5b	Due Monday, 9/14, 5pm
<i>Unit 5c: Earthquakes: Risks w/r/t to Plate Tectonics (+ Examples)</i>	Week 3 (Sept 7-11)
Reading: Abbott, Chapter 4	
Assessment: Unit #5c	Due Monday, 9/14, 5pm

**Homework #2****Due Friday, 9/11, 5pm**

*Unit 6: Earthquakes: US Earthquake Hazards & History*  
Reading: Abbott, Chapter 5  
Assessment: Unit #6

Week 4 (Sept 14-18)

Due Monday, 9/21, 5pm

**Exam #1 Plate Tectonics & Earthquakes**

Week 4 (Sept 14-18)

**Available on Thurs 9/17 or Fri 9/18 (Times TBA)****Writing Assignment #1****Due Friday, 9/25, 5pm**

*Unit 7a: Volcanoes: Introduction & Settings,*  
Reading: Abbott, Chapter 6  
Assessment: Unit #7a

Week 5 (Sept 21-25)

Due Monday, 9/28, 5pm

*Unit 7b: Volcanoes: Minerals, Rocks, Melting of Rocks*  
Reading: Abbott, Chapter 6  
Assessment: Unit #7b

Week 5 (Sept 21-25)

Due Monday, 9/28, 5pm

*Unit 8: Volcanoes: The 3 V's, Eruptions*  
Reading: Abbott, Chapter 6  
Assessment: Unit #8

Week 5 (Sept 21-25)

Due Monday, 9/28, 5pm

*Unit 9a: Volcanoes: Structures*  
Reading: Abbott, Chapter 6  
Assessment: Unit #9a

Week 6 (Sept 28-Oct 2)

Due Monday, 10/5, 5pm

*Unit 9b: Volcanoes: Landforms*  
Reading: Abbott, Chapter 6  
Assessment: Unit #9b

Week 6 (Sept 28-Oct 2)

Due Monday, 10/5, 5pm

*Unit 10a: Volcanoes: Hazards & Case Histories*  
Reading: Abbott, Chapter 7  
Assessment: Unit #10a

Week 6 (Sept 28-Oct 2)

Due Monday, 10/5, 5pm

**Homework #3****Due Friday, 10/2, 5pm**

*Unit 10b: Volcanoes: Mt. St. Helens & Monitoring*  
Reading: Abbott, Chapter 7  
Assessment: Unit #10b

Week 7 (Oct 5-9)

Due Monday, 10/12, 5pm

**Exam #2 Volcanoes**

Week 7 (Oct 5-9)

**Available on Thurs 10/8 or Fri 10/9 (Times TBA)****Writing Assignment #2****Due Friday, 10/16, 5pm**

*Unit 11a: Sun Energy & Atmosphere*  
Reading: Abbott, Chapter 9  
Assessment: Unit #11a

Week 8 (Oct 12-16)

Due Monday, 10/19, 5pm

<i>Unit 11b: Wind &amp; Weather</i> Reading: Abbott, Chapter 9 Assessment: Unit #11b	Week 8 (Oct 12-16) Due Monday, 10/19, 5pm
<i>Unit 12a: Severe Weather: Thunder, Lightning &amp; Hail</i> Reading: Abbott, Chapter 10 Assessment: Unit #12a	Week 8 (Oct 12-16) Due Monday, 10/19, 5pm
<i>Unit 12b: Severe Weather: Tornadoes</i> Reading: Abbott, Chapter 10 Assessment: Unit #12b	Week 9 (Oct 19-23) Due Monday, 10/26, 5pm
<i>Unit 13a: Oceans: Intro &amp; Sea Level</i> Assessment: Unit #13a	Week 9 (Oct 19-23) Due Monday, 10/26, 5pm
<i>Unit 13b: Oceans: Waves &amp; Currents</i> Assessment: Unit #13b	Week 9 (Oct 19-23) Due Monday, 10/26, 5pm
<b>Homework #4</b>	<b>Due Friday, 10/23, 5pm</b>
<i>Unit 14a: Hurricanes: Formation &amp; Hazards</i> Reading: Abbott, Chapter 11 Assessment: Unit #14a	Week 10 (Oct 26-30) Due Monday, 11/2, 5pm
<i>Unit 14b: Hurricanes: Case Studies and Future Risks</i> Reading: Abbott, Chapter 11 Assessment: Unit #14b	Week 10 (Oct 26-30) Due Monday, 11/2, 5pm
<i>Unit 15a: Tsunami: Formations &amp; Hazards</i> Reading: Abbott, Chapter 8 Assessment: Unit #15a	Week 10 (Oct 26-30) Due Monday, 11/2, 5pm
<b>Homework #5</b>	<b>Due Friday, 10/30, 5pm</b>
<i>Unit 15b: Tsunami: Case Studies</i> Reading: Abbott, Chapter 8 Assessment: Unit #15b	Week 11 (Nov 2-6) Due Monday, 11/9, 5pm
<b>Exam #3      Severe Weather, Hurricanes, Tsunami</b> <b>Available on Thurs 11/5 or Fri 11/6 (Times TBA)</b>	Week 11 (Nov 2-6)
<b>Writing Assignment #3</b>	<b>Due Friday, 11/13, 5pm</b>
<i>Unit 16: Climate &amp; Greenhouse Effect</i> Reading: Abbott, Chapter 12 Assessment: Unit #16	Week 12 (Nov 9-13) Due Monday, 11/16, 5pm
<i>Unit 17a: Natural Climate Variability: El Niño</i>	Week 12 (Nov 9-13)

Reading: Abbott, Chapter 12 Assessment: Unit #17a	Due Monday, 11/16, 5pm
<i>Unit 17b: Natural Climate Variability: Ice Ages</i> Reading: Abbott, Chapter 12 Assessment: Unit #17b	Week 12 (Nov 9-13) Due Monday, 11/16, 5pm
<i>Unit 18a: Climate Change: Evidence</i> Reading: Abbott, Chapter 12 Assessment: Unit #18a	Week 13 (Nov 16-20) Due Monday, 11/23, 5pm
<i>Unit 18b: Climate Change: Projections</i> Reading: Abbott, Chapter 12 Assessment: Unit #18b	Week 13 (Nov 16-20) Due Monday, 11/23, 5pm
<i>Unit 19a: Flood</i> Reading: Abbott, Chapter 13 (Flood) Assessment: Unit #19a	Week 13 (Nov 16-20) Due Monday, 11/23, 5pm
<b>Homework #6</b>	<b>Due Friday, 11/20, 5pm</b>
<i>Unit 19b: Fire</i> Reading: Abbott, Chapter 14 (Fire) Assessment: Unit #19b	Week 14 (Nov 23-27) Due Monday, 11/30, 5pm
<i>Unit 20a: Landslides</i> Reading: Abbott, Chapter 15 (Landslides) Assessment: Unit #20a	Week 15 (Nov 30-Dec 4) Due Monday, 12/7, 5pm
<i>Unit 20b: Impacts</i> Reading: Abbott, Chapter 17 (Impacts) Assessment: Unit #20a	Week 15 (Nov 30-Dec 4) Due Monday, 12/7, 5pm
<b>Homework #7</b>	<b>Due Friday, 12/4, 5pm</b>
<b>Exam #4      Climate Change, Flood, Fire, Landslides, Impacts</b> <b>Available on Tues 12/8 or Wed 12/9 (Times TBA)</b>	Week 16 (Dec 7-9)
<b>Final Exam (Cumulative)</b>	<b>Available on Friday 12/11 or Monday 12/14</b>