

**GEOLOGY 3312/3112: “Geoscience Processes”**  
**CRNs: 11512/11513/15443**  
**The University of Texas at El Paso**  
**Department of Earth Environmental and Resource Sciences**

**Instructor:**

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*Note: Please only use the internal email system to Blackboard to communicate with the instructors, not utep.edu mail (see below)*

**Course Description:**

From the UTEP catalog: *GEOL 3312/3112 Geoscience Processes: Field-oriented, problem-solving studies emphasizing field identification of rocks; study of landforms and processes that create them; use of maps, aerial photographs, and satellite imagery; skills used in geologic mapping and field work. Emphasis on developing observational and analytical skills and the development of multiple working hypotheses. Prerequisite: Junior standing in Geology\* or permission of instructor.*

\*Note that this usually means having previously taken both “Physical Geology” and “Historical Geology”. **Also note that Geology majors should be taking both “Geoscience Processes” and Mineralogy together during the same semester!** For Geology majors, both courses are co-requisite to one another and are only offered once per year. Also, we may, on occasion, do joint activities between the two courses. In addition, both courses are prerequisites for all other courses in the Geology program. So not taking both courses concurrently will put you at a disadvantage. **Also, if you are in the lecture CRN, you must also be in the lab CRN, i.e. you cannot take just one or the other, you must take both lecture and lab simultaneously.** Talk to Dr. Hurtado and your advisor if you have questions!

**Course Objectives and Expected Learning Outcomes:**

I hope to teach you how to describe and think about geologic materials and processes in the field and in the laboratory, and – equally important – how to record those observations and interpretations in a meaningful way and use them to deduce the geologic history of a field site. Specifically, we will cover the following topics and skills, most of which relate to field geology as a forensic science:

1. Use of a topographic map and aerial imagery for navigation and recording of spatial data in the field.

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2. Construction, use, and analysis of topographic maps, topographic profiles, stratigraphic columns, and geologic maps in the field and the laboratory.
3. Use of a Brunton compass for navigation and for measuring geologic features in the field.
4. Keeping an organized and complete field book to record field data.
5. Basic concepts and analytical tools (structural, stratigraphic, geomorphic, etc.) used in field geology.
6. Visualization of geologic data and relationships in 3-D.
7. Analysis of crosscutting relationships and 4-D thinking.
8. Thinking of the Earth in terms of processes and the application of the concept of “process from product”.
9. Identification and description of common rocks, minerals, soils, and other geologic materials.
10. Identification and interpretation of tectonic, volcanic, geomorphic and other landforms/structures.
11. Survey of fundamental concepts in plate tectonics, geophysics, historical geology, structural geology, petrology, sedimentology, geomorphology and other topics.

**Ideally, you will learn to operate as a field geoscientist when solving problems:** asking questions; making (and documenting) careful observations; thinking critically and quantitatively about those observations; deducing processes from products; thinking three- and four-dimensionally; developing multiple working hypotheses; and testing those hypotheses. An important part of this will involve working cooperatively and communicating your ideas to others. Most importantly, you must learn to be honest with yourself and **trust your own observations.**

### **Grading:**

~20 lab/field trip/homework assignments (60%); 1 midterm examination (10%); 1 final examination (20%); participation (10%)

**Successful completion and submission of all assignments and exams, and acceptable attendance, is the bare minimum requirement to pass the class (i.e. a “D-”). Multiple missed assignments and/or exams will not allow you to pass.**

**Your final grade in this course will be shared among both GEOL 3312 and GEOL 3112.** Grades will be computed based on the above percentage breakdown applied to the total number of points computed at the end of the semester. Each graded item (assignment, exam, quiz, etc.) will have an assigned point value that may vary from item to item. Every graded item will have an associated rubric that will be used for evaluating it and assigning points. The rubric will have crucial information that could affect your grade for each activity. You will find these rubrics by clicking on the appropriate assignment link in Blackboard.

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Your participation will, in part, be evaluated based on attendance, weekly quizzes, weekly posts made to the Blackboard discussion forums, etc. Discussion forum posts and responses will have specific requirements, to include your post as well as replies to at least two others. Some extra credit points from assignments, quizzes, etc. may be made available.

**Fieldwork:**

**There will be several excursions to on- and off-campus field localities during the semester.** Due to UTEP rules, we will all need to fill out insurance and release forms in class before our trips. Please consult Dr. Hurtado ASAP if you have health or other concerns about doing fieldwork. Also consult Dr. Hurtado ASAP if you have scheduling concerns about any of the field trips.

**Please be prepared when we go outdoors (e.g. have water, sunscreen, hat, good walking shoes, face covering, etc.)!** Among the items you will need (e.g. they are required) for your field assignments are: **a field notebook (notebooks will be provided to you by Dr. Hurtado), hand lens (these will be provided to you by Dr. Goodell), a clipboard, 1-cm grid graph paper, a sharp mechanical pencil, a fine-tipped ink pen, a metric scale ruler, a protractor, colored pencils, and a calculator.** In addition, rock hammers and Brunton compasses will be available for your use on the days we need them (no need to purchase these). Talk to Dr. Hurtado if you have any concerns about field equipment.

**Class Meetings:**

Lecture: T AND Th 9-10:20am in Geology 123

The lecture portion of the course will be face-to-face largely following a “flipped classroom” format enabled by Blackboard. We will proceed on a weekly schedule (i.e. **not** at your own pace).

Lab: T OR Th 12:30-3:20 pm in Geology 320

The lab portion of the course will meet face-to-face for field trips and for “workshops” where new skills are introduced and exercised. Aside from the field trip work, other lab assignments will be for you to do asynchronously, but we will proceed on a weekly schedule (i.e. **not** at your own pace).

**This is an IN-PERSON class, it is NOT a remote-only class. Attendance at ALL lecture and lab sessions is expected of all students. Successful completion of ALL the labs (especially field trips) is also expected of all students. Excessive absences and/or missing work will have negative grade consequences. While I expect everyone to attend ALL lab sessions, particularly field trips, some accommodation can be made on a case-by-case basis, with a documented and valid rationale.**

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**Office Hours:**

Dr. Hurtado: M 2-4pm (or by appointment) face-to-face in Geology 301a or online by request/appointment

**Tara Sweeney: TBA**

**You are strongly encouraged to participate in office hours so that you can stay engaged with the class and get help with the lab assignments and/or any material presented in the lectures.**

**Communication:**

Method	Response Time	Notes
Blackboard Announcements	--	Be sure to check Blackboard regularly. Blackboard is available on the web and also as a mobile app.
Blackboard Discussion Forum	Within <24 hours for replies to posts	Posts are visible to the instructors and the whole class. There are dedicated forums for technical help, general help, fun posts, as well as specific assignments.
Microsoft Teams  Zoom	New appointments available within 24-48 hours	Schedule new appointments via Blackboard email. Scheduled office hours are in a group setting. Private conversations are possible on request/by appointment.
Email ( <b>do not</b> use utep.edu email; use Blackboard internal email <u>only</u> please)	Within <6 hours	<b>For routine, direct, confidential contact with instructors, this is the preferred method.</b> Please always include the course name as the subject line, state your message clearly, etc.
Cell Phone (see numbers above)	Within <3 hours	Monday to Friday: 9am-5pm Weekend: emergencies only. Please leave voice mail! <b>No texts, please.</b>
Office Phone (see numbers above)	Within <24 hours	Please leave voice mail!

**Class Online Materials:**

Check the Blackboard portal for this course often for updates and announcements. The online materials are the key part of the class and Blackboard will be the main venue all class business. Note that, for simplicity, only the Blackboard portal for the lecture component (GEOL 3312) will be used (any Blackboard portals for the lab component, GEOL 3112, will remain unused). The course is designed around weekly modules, each of which includes learning content to include lecture notes,

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videos, PDF readings, weblinks, assignments (labs, homeworks, discussions), and quizzes. These modules will be released to Blackboard weekly.

*All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.*

**Text:**

**There is no required textbook to buy, but there are required readings that will be posted to Blackboard. These include three online textbooks which are linked to from Blackboard**

Readings from a variety of other books will be given as PDFs available for download. These books include, but are not limited to:

Compton, 1985, *Geology in the Field*, John Wiley & Sons, Inc: New York, 416 p. (ISBN-13: 978-0471829027)

Maley, 2005, *Field Geology Illustrated* (2<sup>nd</sup> edition): Mineral Land Publications: Boise, ID, 704 p. (ISBN 0940949059)

Reynolds, Johnson, Kelly, Morin, and Carter, 2008, *Exploring Geology*, McGraw-Hill Higher Education: Boston, 575 p. (ISBN 978-0-07-313515-1)

Spencer, 2000, *Geologic Maps: A Practical Guide to the Preparation and Interpretation of Geologic Maps* (2<sup>nd</sup> edition), Prentice Hall: Upper Saddle River, NJ, 148p. (ISBN 0130115835)

West, 1994, *Geology Applied to Engineering*, Prentice Hall: Upper Saddle River, NJ, 560 p. (ISBN 0024258814)

In addition, a large number of supplemental materials from a variety of other sources will also be provided on Blackboard as PDF readings, PPT files, etc. for discussion and for your general reference throughout the semester.

**Required Information Technology Tools and Resources:**

To fully engage in and complete the work for this course, everyone will individually need to have daily access to a reliable, preferably broadband, internet connection, ideally on a laptop or a desktop computer equipped with a camera and microphone and a selection of software (see below). Check that your computer hardware and software are up-to-date and are able to access all parts of the course.

**All students will be expected to have access to the following information technology, software, tools, and resources. Most of these are available to you through UTEP (or otherwise) at little to no cost.**

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1. *Microsoft Office* (Word, Excel, and PowerPoint) or equivalent productivity software (e.g. Google Docs, etc.). This will be used to write reports, analyze data, make illustrations, etc. for assignments. Google Docs is **free**.
2. *Microsoft Paint* (or your favorite other image viewing/editing software, e.g. GIMP, Adobe Photoshop, Inkscape, Adobe Illustrator, etc.). This will be used to make/view illustrations. MS Paint is **free**.
3. *Adobe Reader* (or your favorite other PDF viewer). This will be used to view PDF documents posted by the instructors. Adobe Reader is **free**.
4. *Windows Media Player, QuickTime Player, VLC, or equivalent video player*. This will be used to view video files. These tools are **free**.
5. *Google Earth Pro* (the desktop version of Google Earth, not the web-based version; get it for **free** at <http://earth.google.com>). This will be used as a GIS for viewing geospatial datasets in support of lecture and lab activities.
6. *Strabospot* (get it for **free** at <http://strabospot.org>; a free account will be required). We will experiment with this tool for collecting and sharing field data.
7. *GeoVis3D* (get it for **free** at <http://ausgeol.org>). This tool will be used for viewing 3D models.
8. *Access to <http://gigapan.com> and <http://sketchfab.com>* (no need to make accounts, but you can for **free** if you like). These websites will be where you will access high-resolution imagery and 3D models.
9. *Access to your UTEP email account*. We may need to communicate via external email throughout the semester. **Note, however, that the primary means of email communication will be through the Blackboard internal email function.**
10. *Access to UTEP Blackboard*. Please be sure to check that you have access to the Blackboard site for this course by the first day. We will use Blackboard as our primary means of communication (including email) and for all course business. In particular, we will make use of the Discussion Board. Please check that you can use both of these functions, as well as the Blackboard email system. **Mozilla FireFox and Google Chrome are the best-supported browsers for Blackboard.**
11. *Access to Zoom and/or Microsoft Teams*. Please be sure to check that you can use these videoconferencing tools. We may need to meet for class using these tools at some points during the semester as well as for remote office hours for those who choose. These tools are **free**.
12. *Access to the UTEP VPN* (see this link for more information [https://www.utep.edu/technologysupport/ServiceCatalog/NET\\_VPNGlobalProtect.html](https://www.utep.edu/technologysupport/ServiceCatalog/NET_VPNGlobalProtect.html)). Connecting to the VPN will be necessary to access UTEP

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library resources and for running UTEP-licensed software (but not for Blackboard) when you are off-campus.

13. Ability to install new software and/or access websites not specified here. As the semester progresses, you may be asked to install and use new software or other assets. Please let the instructors know if you have difficulty.

You will also be expected to stay continually up to date with all information posted on Blackboard, which will include the syllabus, course calendar/schedule, grades, announcements, email, discussion boards, video conferencing, course notes, readings, supplemental material, and assignments. All communications, including email, for the course will be exclusively via Blackboard. **Also, all course materials will be disseminated electronically, and most work will be assigned and handed-in electronically via Blackboard only. Email or hardcopies will only be accepted as directed by the instructor. Examples of work you will turn in as hardcopies include geologic maps.**

That said, always keep off-line backups of any work you produce in the event of a problem with Blackboard. This way, you will have evidence that you completed the work and will not lose credit. Always submit your work with plenty of time to spare in the event that you have a technical issue with the Blackboard, the network, and/or your computer (see below).

**If at any time you have problems accessing Blackboard, the internet, or any of the resources described here, or have any other technical difficulties, please reach out to the instructors ASAP. For troubleshooting, note that the Help Desk (<https://www.utep.edu/technologysupport/>) is trained specifically in assisting with technological needs of students.**

### **Class Recording Policies:**

Some class sessions may be recorded. The use of recordings will enable you to have access to class lectures, group discussions, etc. in the event you miss any required synchronous or in-person class meetings. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP’s acceptable-use policy. Any recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. You may not share recordings outside of this course. Doing so may result in disciplinary action.

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**Attendance and Engagement Policies:**

I expect everyone in the class to attend all lecture and lab meetings, especially field trips, and attendance will be taken. If you miss a class meeting with a valid, documented excuse, accommodations can be made. Because of the fast, week-to-week pace of the course, it will be particularly important that every student maintain engagement. The onus will be on each one of you to make your own experience in the class a success. That means you need to **keep on schedule and on task from week-to-week**, including:

- attending all scheduled class meetings
- staying in the loop on and being proactive about communication
- participating in all discussions and other interactive activities
- being diligent in reading/viewing all materials posted to Blackboard and making progress on assignments from week-to-week, e.g., for every hour of “class time” you should be devoting 3 hours to preparatory/study time and/or working on assignments. You are responsible for any and all material posted to Blackboard.
- not hesitating to ask questions about material posted to Blackboard, e.g. by emailing the instructors directly, posting questions to Blackboard, attending office hours (virtual or face-to-face), etc.
- meeting deadlines and keeping your commitment to complete all work (major assignments and other graded work) and completing it on time

Each one of the above items will contribute to how you will be evaluated for class participation/attendance. Your success in each of them will also contribute to high scores on your assignments and exams.

**Late and Missing Work Policies:**

Generally, the instructors will post new material (including assignments, readings, lectures, etc.) to Blackboard on Mondays. Generally, you will have at least one week to do work (homework, labs, quizzes, discussion board posts, etc.) which will generally be due on Blackboard on Mondays no later than midnight (11:59 pm MT). **Due dates may change/vary, though, so be sure to read the instructions carefully.**

Unless other arrangements are made in advance, or you have a documented and valid excuse (see below), **late work may lose up to 50% of its value for each day it is late, and work may not be accepted more than one week late.** In general, make-up field trips may not be available because of logistical difficulties. Note that any make-up work or exams may be in a different format than the original work; may include a different scope than the original work (especially for field trips); may require more intensive preparation; and may be graded with penalty points. If you miss an assignment, quiz, exam, etc. and the reason is not considered excusable,

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you may receive a zero. It is therefore important to reach out to the instructor, in advance if at all possible, and explain with proper documentation why you missed (or anticipate missing) a given course requirement. Once a deadline has been established for make-up work, it is possible that no further extensions or exceptions will be granted. **Bottom line: stay on time with assigned work and don't fall behind, but, if you do, TALK WITH THE INSTRUCTORS – do not just give up on work you are behind on.**

According to UTEP Curriculum and Classroom Policies: *“When, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of “W” before the course drop deadline and with a grade of “F” after the course drop deadline.”* See the UTEP Undergraduate Catalog for a list of excuse absences which include, but are not limited to, illness, absence with the instructor's prior approval, official University business, etc., but all require documentation. **Because you may be dropped from the course if you have excessive missing work or are not sufficiently engaged in the course, please contact Dr. Hurtado about any concerns, schedule conflicts, missing work, etc. ASAP and, whenever possible, in advance. Note that I will not entertain entreaties to grant extensions or an incomplete grade for the course at the last minute of the semester!**

#### **Course Drop and Incomplete Grade Policies:**

To drop this class, please contact the Registrar's Office (<https://www.utep.edu/student-affairs/registrar/students/registration.html>) to initiate the drop process. **If you cannot complete this course for whatever reason, please contact me ASAP. If you do not, you are at risk of receiving an “F” for the course.**

**Note that I will not entertain entreaties to grant extensions or an incomplete grade for the course at the last minute of the semester!**

Incomplete grades may be requested/assigned only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines. If the deadlines are missed, the incomplete grade will automatically turn into an F.

#### **Academic Dishonesty Policies:**

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures (HOOP). It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as

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ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. **Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. The University guidelines for academic dishonesty are very specific and will be strictly followed.** All suspected violations of academic integrity must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) (<https://www.utep.edu/student-affairs/osccr/>) for possible disciplinary action. Refer to the UTEP HOOP (<https://www.utep.edu/hoop/section-2/student-conduct-and-discipline.html>), and the guidelines here (see <https://www.utep.edu/student-affairs/osccr/student-conduct/academic-integrity.html>) for more information, and contact the Dean of Students or Dr. Hurtado if you have any concerns.

*Some of your course work and assessments may submitted to SafeAssign, a plagiarism detecting software. SafeAssign is used review assignment submissions for originality and will help you learn how to properly attribute sources rather than paraphrase.*

Note that this course may require you to work in groups at times and individually at other times. **Although reasonable collaboration will occur from time-to-time (on assignments, not exams), all work you turn for a grade in is expected to be your own!** You MUST learn to trust your own observations and interpretations (especially in the field) and NOT rely on those of others. This is your opportunity to learn the material and to hone your skills, so do not cheat yourself by copying the work of others. Show all your work and be prepared to explain it! Copying of other's work WILL be noticed and WILL NOT be tolerated.

### **Guidance on Artificial Intelligence:**

The use of generative AI tools such as Chat GPT will only be permitted in this course for explicitly specified activities. Any use of such tools **must** be clearly and explicitly noted or cited: Students must cite any borrowed or AI generated content sources to comply with all applicable citation guidelines and copyright law, and to avoid plagiarism. Instances that violate these guidelines will be referred to the Office of Student Conduct and Conflict Resolution. See Academic Dishonesty Policies (above) for more information.

### **Course Citizenship Policies:**

This class will require interactions with your instructors and fellow students in both face-to-face and online, asynchronous environments. Think about your colleagues and your role in these group environments and in the current global circumstances. Collegiality, teamwork, and self-organization will make this class a great experience. Please consider the following guidelines as you interact with others:

- Always consider your audience. Remember that other members of the class and the instructors will be reading any online postings and that they will be present at face-to-face meetings.

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- Respect and courtesy must be provided to classmates and to the instructors at all times. No harassment or inappropriate behavior will be tolerated.
- When reacting to someone else’s message online, address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation.
- Blackboard is not a public internet venue, so all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and the instructors only. Please do not copy documents and paste them to a publicly-accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).

The instructors will be exercising other important leadership skills with you throughout the course, emphasizing good team behavior and dynamics.

**Accommodations Policies:**

UTEP is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services (CASS) (<https://www.utep.edu/student-affairs/cass/ada-policies/accommodations-for-individuals-with-disabilities%20.html>) Note that the student is responsible for following up with the instructors about any accommodation letters and instructions.

**Military Service:**

*If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructors as soon as possible.*

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### **Student Resources:**

UTEP provides a variety of student services and support, including:

- UTEP Library: Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- RefWorks: A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.
- University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- Math Tutoring Center (MaRCS): Ask a tutor for help and explore other available math resources.
- History Tutoring Center (HTC): Receive assistance with writing history papers, get help from a tutor and explore other history resources.
- Help Desk: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.
- Military Student Success Center: UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.
- Center for Accommodations and Support Services (CASS): Assists students with ADA-related accommodations for coursework, housing, and internships.
- Counseling and Psychological Services: Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.
- **Student Success Help Desk (SSHD)**: Students experiencing challenges or obstacles to academic success including registration, financial, food, housing, and transposition resources my submit a ticket request assistance to [studentsuccess@utep.edu](mailto:studentsuccess@utep.edu)
- **UTEP Food Pantry**: Non-perishable food items are available to students who are currently enrolled in classes. Bring a Miner Gold Card to Memorial Gym, Room 105, Monday through Friday, 10 a.m. to 2 p.m.

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**Course Outline and Schedule:**

Note that **the details of our schedule are subject to change** as the semester progresses. Please be flexible, and let Dr. Hurtado know if you have any questions or concerns. A preliminary, detailed schedule is attached.

Schedule Notes:

1. There will be no class meetings (lab or lecture) on the following days: November 23 (Thanksgiving). In addition, Dr. Hurtado may be out of town for field work or other business on certain other days to be determined. This, however, DOES NOT imply that class will be cancelled on those days! Unless you are otherwise notified, always assume class will meet (perhaps online), regardless of whether Dr. Hurtado is out of town or not! Meetings when Dr. Hurtado is away may occur over Zoom/Teams.
2. Note that on some weeks, our normal lecture and lab schedule may be altered somewhat. For example, you may meet exclusively with Dr. Hurtado or Dr. Goodell all day (i.e. ~9am ~3:30 pm) on some Tuesdays or Thursdays for field trips or other activities.
3. Note the dates of field trips. Some field trips will occur during class/lab time on Tuesdays (see above). Saturday field trips will take most, if not all, of the day. We will typically leave UTEP by ~8 am or so and return by ~5 pm or so. During those weeks when there is a Saturday field trip (or no lab assignment at all), we may still use the lab time for class, in addition to the normally scheduled lectures.
4. All new materials, including assignments, will be posted to Blackboard on Mondays. Assignments are due the following Monday or when otherwise indicated. Note that the course is NOT self-paced. We will follow a tight, weekly schedule.

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<b><u>Week</u></b>	<b><u>Dates (T, Th)</u></b>	<b><u>Topics and Labs</u></b>
Week 1	Aug. 29, 31	Introduction; Earth Materials Review <b><i>Lab 1 (T): The Campus Andesite</i></b> <i>(In-class, on-campus field trip w/ mineralogy, T pm, all students)</i> <b><i>Lab 2 (Th): Rocks &amp; Minerals (all students meet w/ Dr. Goodell)</i></b> <b><i>Discussion Board #1: Introductions</i></b> <b><i>Fill out and turn in required forms</i></b>
Week 2	Sept 5., Sept. 7	Geologic Time; Earth History <b><i>Lab 3 (T): Transmountain Road</i></b> <i>(Off-campus field trip, all day T, all students – details TBA)</i> <b><i>Homework 1: Reading Assignment and Microsoft Word</i></b> <b><i>Discussion Board #2: Reading Assignment</i></b>
Week 3	Sept. 12, 14	Topographic and Geologic Maps; Fieldwork Basics <b><i>Lab 4 (T/Th): Map and Compass Basics Exercises</i></b> <i>(In-class, on campus field trip, T/Th pm)</i> <b><i>Homework 2: Research Assignment and Microsoft PowerPoint</i></b> <b><i>Discussion Board #3: Outcrop Analysis</i></b>
Week 4	Sept. 19, <u>21</u>	Geologic Principles; Observational Field Science <b><i>Lab 5 (T/Th): Indoor Mapping Exercise</i></b> <i>(In-class assignment, room 320)</i> <b><i>Discussion Board #4: Outcrop Analysis</i></b>
Week 5	Sept. 26, 28	Earth Structure; Geophysical Concepts <b><i>Lab 6 (T/Th): Fitness Center Mapping</i></b> <i>(In-class, on campus field trip, T/Th pm)</i> <b><i>Discussion Board #5: Geologic Map Interpretation</i></b>
Week 6	Oct. <u>3</u> , <u>5</u>	Plate Tectonics; Orogenesis <b><i>Lab 7: Stratigraphic Principles</i></b> <i>(In-class workshop, room 320)</i> <b><i>Homework 3: Quantitative Assignment and Microsoft Excel</i></b> <b><i>Discussion Board #6: Geologic Map Interpretation</i></b>
Week 7	Oct. 10, 12	Structural Geology <b><i>Lab 8 (T/Th): Structural Geology</i></b> <i>(In-class workshop, room 320)</i> <b><i>Discussion Board #7: Midterm Exam Review</i></b>

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<b><u>Week</u></b>	<b><u>Dates (T, Th, S)</u></b>	<b><u>Topics and Labs</u></b>
Week 8	Oct. 17, 19	<b>Midterm Examination: will be TBD during this week</b> <i>Discussion Board #8: Geophysics</i>
Week 9	Oct. 24, 26	Metamorphism and Metamorphic Rocks <b>Lab 9 (T): Mt. Cristo Rey Mapping I</b> <i>(Off-campus field trip, <u>all day T, all students</u> – details TBA)</i> <b>Discussion Board #9: Geochemistry</b>
Week 10	Oct. 31, Nov. 2	Earthquakes, Active Tectonics, Geologic Hazards <b>Lab 10: Orogenesis and Plate Tectonics in Google Earth (online)</b> <b>Discussion Board #10: Geologic Hazards</b>
Week 11	Nov. 7, 9, 11	Igneous Intrusive and Volcanic Processes and Products <b>Lab 11: Bishop’s Cap Mapping</b> <i>(Sat., all-day, off-campus field trip, <u>all students</u> – details TBA)</i> <b>Discussion Board #11: Hydrology</b>
Week 12	Nov. 14, 16, 18	Sedimentary Processes and Sedimentary Rocks <b>Lab 12: Hydrology, Faults, Volcanoes, and Planetary Field Geology in the Potrillo Volcanic Field</b> <i>(Sat., all-day, off-campus field trip, <u>all students</u> – details TBA)</i> <b>Discussion Board #12: Geomorphology</b>
Week 13	Nov. 21	Thanksgiving Break Week <b>Lab 13: Surface Processes in Google Earth (online)</b> <b>Discussion Board #13: Earth Resources</b>
Week 14	Nov. 28, 30, Dec. 2	Surface Processes: Weathering, Erosion, and Geomorphology <b>Lab 14 (T): Cristo Rey Mapping II</b> <i>(Off-campus field trip, <u>all day Th, all students</u> – details TBA)</i> <b>Lab 15: Minerals in the Field at Orogrande</b> <i>(Sat., all-day, off-campus field trip, <u>all students</u> – details TBA)</i> <b>Discussion Board #14: Final Exam Review</b>
Week 15	Dec. 5, 7	Catch-up and Review

**Final Examination will be TBD during the week of Dec. 11.**

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