

**GEO. 420K - INTRODUCTION TO FIELD AND STRATIGRAPHIC METHODS**

**LECTURE:** Monday and Wednesday, 2:00 - 3:00 p.m.; JGB 2.216  
**LAB:** Friday 2:00 - 5:00 p.m. in JGB 2.202 (#27665), JGB 2.218 (#27670), JGB 3.120 (#27675), JGB 3.222 (#27680)

**INSTRUCTORS:** Dr. Mark Helper, JGB 4.112 [helper@jsg.utexas.edu](mailto:helper@jsg.utexas.edu)  
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Dr. Brian Horton, JGB 5.220AB  
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Phone: 512-470-0796

**TEACHING ASSISTANTS:**  
JGB 2.202  
JGB 2.218  
JGB 3.120  
JGB 3.222

**OFFICE HOURS:** Helper: M, W, F 1-2 and whenever my door is open.  
Horton: M, W 10-11 or by appointment  
T.A.s: See lab syllabus

**GRADING:** Field Projects..... 55% There will be no makeup exams of projects  
Labs ..... 15%  
Lab Exam(s) ..... 15%  
Class Exam(s) ..... 15%

**PREREQUISITES:** A grade of C or better in Geo. 416K, 426P, and 416M (Geo. 426P may be taken concurrently with 420K) for B.S. Geology, or C or better in Geo. 416M and Geo. 416K for G.E.H., Geophysics, Hydrogeology and B.A. Geology. If you do not have these prerequisites and have not already done so, see one of us immediately.

**OTHER ITEMS:** By registering for Geo. 420K, students agree to be available for field trips on at least **4 (four)** weekends. See the following pages for the field trip dates. In addition, some Friday labs may be conducted off campus, but during normally scheduled lab hours.

**Announcements, information pertinent to field trips, labs, etc. will be posted on the 420K Canvas site. Check it often for information about materials for upcoming labs and field trips.**

**ACADEMIC INTEGRITY:** Academic dishonesty will not be tolerated. Anyone in violation of University policy (see Student Handbook) will receive a failing grade and is subject to additional punitive measures, which may include expulsion from the University.

**REQUIRED TEXTS/EQUIPMENT:** 1) Coe, A. L., Geological Field Techniques. Wiley-Blackwell, 323 pp.  
2) Geo420K Lecture, Lab and Field Trip Manual, available from UT Copy Center.  
3) Packet of field equipment, available only at the UT Coop Art Supply Store.  
4) Ot, 20Feher field equipment; see attached list.

**WEB SITE:** UT Canvas site for Geo420K

**SHARING MATERIAL:** No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with anyone outside of the class unless you have my explicit, written

permission. Unauthorized sharing of materials promotes cheating. It is a violation of the University's Student Honor Code and an act of academic dishonesty. I am well aware of the sites used for sharing materials, and any materials found online that are associated with you, or any suspected unauthorized sharing of materials, will be reported to Student Conduct and Academic Integrity in the Office of the Dean of Students. These reports can result in sanctions, including failure in the course.

**CLASS RECORDINGS:** Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings.

**STUDENTS WITH DISABILITIES:** This class respects and welcomes students of all backgrounds, identities, and abilities. If there are circumstances that make our learning environment and activities difficult, if you have medical information that you need to share with us, or if you need specific arrangements in case the building needs to be evacuated, please let us know. We are committed to creating an effective learning environment for all students, but we can only do so if you discuss your needs with us as early as possible. We promise to maintain the confidentiality of these discussions. Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities at 471-6259 (voice) or 512-410-6644 (Video Phone) as soon as possible to request an official letter outlining authorized accommodations. For more information, visit <http://ddce.utexas.edu/disability/about/>.

**ATTENDANCE/RELIGIOUS HOLIDAYS:** By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

**SAFETY, CLASS PARTICIPATION, MASKS:** We will all need to make some adjustments in order to benefit from in-person classroom interactions in a safe and healthy manner. Our best protections against spreading COVID-19 on campus are masks (defined as cloth face coverings) and staying home if you are showing symptoms. Therefore, for the benefit of everyone, this means that all students are required to follow these important rules:

- **Every student must wear a cloth face-covering properly in class and in all campus buildings at all times.**
- **Students are encouraged to participate in documented daily symptom screening, which is available using the [Protect Texas Together app](#).** Once the symptom screening is completed, it will inform students whether they are cleared to come to campus. Students should only come to campus if the symptom screening app clears them to do so. Otherwise, students should isolate and contact a medical professional for further guidance before coming to campus again.
- Information regarding [safety protocols with and without symptoms](#) can be [found here](#).

- **COVID-19: Reporting symptoms, and test results:** To help keep everyone at UT and in our community safe, it is critical that students report COVID-19 symptoms and testing, regardless of test results to [University Health Services](#) and that faculty and staff to the [HealthPoint Occupational Health Program \(OHP\)](#) as soon as possible. Please see [this link](#) to understand what needs to be reported. In addition, to help understand what to do if a fellow student in the class (or the instructor or TA) tests positive for COVID, see this [University Health Services link](#).
- **When attending labs where materials are being shared, each student will wear a provided pair of disposable gloves for the duration of the class period.** Gloves will be properly disposed of at the end of each lab. Do not handle shared specimens or equipment without gloves.

If a student is not wearing a cloth face-covering properly in the classroom (or any UT building), that student must leave the classroom (and building). If the student refuses to wear a cloth face covering, class will be dismissed for the remainder of the period, and the student will be subject to disciplinary action as set forth in the university Institutional Rules/General Conduct 11-404(a)(3). Students who have questions about wearing a face covering/mask while on campus should contact Services for Students with Disabilities; students who have a condition that precludes the wearing of a cloth face covering must follow the procedures for obtaining an accommodation working with Services for Students with Disabilities. Note that there is no exemption or waiver for the face covering/mask mandate, and a “mask waiver” or exemption is not considered a reasonable accommodation.

***ADDITIONAL GUIDANCE, SPRING 2021:***

- Consumption of food and drink is not allowed in classrooms or public areas of university buildings except for designated break areas.
- Everyone should enter and exit the building by designated doors.
- Use the hand sanitizer provided in buildings, or your own personal hand sanitizer, after entering the building.
- Follow the corridor and stairway directional signage where applicable, maintaining proper social distancing and noted path of travel.
- All physically able individuals should use stairs whenever possible. If an elevator is required there should be no more than the number of occupants noted on the elevator signage in the elevator at a time. Maintain social distancing while in an elevator.
- At the end of class, students will be dismissed by rows, starting at the back when the classroom has exits in the rear, and at the front when the classroom has exits in front.

**GEO420K – FIELD TRIP DATES  
SPRING 2021**

By registering for GEO 420K, you agree to be available for field trips on at least four weekends. The four field trip weekends this semester for are:

- Trip 1: Feb 6 OR 7 – Dr. Horton
- Trip 2: Feb. 20 OR 21 – Dr. Horton
- Trip 3: April 10 OR 11 – Dr. Helper
- Trip 4: April 24 OR 25 – Dr. Helper

These dates are provided now so that you can plan your weekend activities accordingly. Unlike other courses, the field trips are not supplementary to the classroom work; *they are 55% of your grade*. **Your attendance and participation in all field exercises are required for a passing grade, without exceptions.** Specific information for each trip, *including which days you are expected to attend*, will be posted on the class Canvas site and can be found in the Lab/Field Trip Manual.

A list of materials needed for the field exercises, all contained in the **required** course packet available from the Co-Op Art Supply store, is attached.

LECTURE AND LAB SCHEDULE - GEO. 420K, 2021

<u>Date</u>	<u>Lecture</u>	<u>Lab</u>
1/20	Overview and Introduction (M.H.) The Geologic Compass – Strike/Dip, Bearing/Plunge (M. H.)	1. Compass/Pace Compass Map*
1/25	Sedimentary Rock & Unit Descriptions (B.H.)	2. Rock and Rock Unit Descriptions
1/27	Logging Clastic Successions, Cenozoic GOM History, Trip 1 Prep. (B.H.)	
2/1	Clastic Successions: Depositional Systems (B.H.)	3. Net Sand Isopach Mapping
2/3	Stratigraphy & Subsurface Analysis (B.H.) <b>Field Trip 1: Cenozoic Clastics (2/6 or 2/7)</b>	
2/8	Cyclicality & Stratigraphic Sequences (B.H.)	4. Sequence Strat. & Correlation
2/10	Trip 1 Debrief & Trip 2 Prep. (B.H.)	
2/15	Carbonates: Descriptions & Depositional Systems (B.H.)	5. Fieldmove Clino App
2/17	Phanerozoic Stratigraphy of Central Texas (B.H.) <b>Field Trip 2: Cretaceous Carbonate Section Correlation (2/20 or 2/21)</b>	
2/22	Sedimentary Structures, Paleocurrents, Trace Fossils, Fauna (B.H.)	6. Topo Maps & GPS*
2/24	Trip 2 Debrief (B.H.)	
3/1	Biostratigraphy, Lithostratigraphy, Chronostratigraphy (B.H.)	7. Unconformities: x-sections, map reading
3/3	Sedimentary Basin Analysis, Tectonics, Sediment Provenance (B.H.)	
3/8	Central Texas paleogeography and modern geomorphology (B.H.)	No Lab
3/10	Base Maps, Grids and Location Methods (M. H.)	
3/13 - 3/21	SPRING BREAK	
3/22	The Global Positioning System (M. H.)	8. Geologic Maps I
3/24	Geologic Map Patterns: Strike Lines (M. H.)	
3/29	Geologic Map Patterns: Strike Lines, Dip & Unit Thickness (M. H.)	9. Geologic Maps II
3/31	Introduction to Faults (M. H.)	
4/5	Introduction to Folds (M. H.)	10. Geologic Maps III/ Folds and Faults
4/7	Field Trip 3 Prep. & Cenozoic Geology of Central Texas (M.H.) <b>Field Trip 3: Mapping Project 1 (4/10 or 4/11)</b>	
4/12	Cross Section Construction (M. H.)	11. Cross Sections
4/14	Metamorphic and Igneous Rocks Review (MH)	
4/19	Trip 3 Debrief; Textures and Fabrics in Tectonites (M. H.)	12. Describing & Measuring Metamorphic Rocks
4/21	Precambrian Geology of the Llano Uplift (M. H.) <b>Field Trip 4: Sketching &amp; Measuring in pC Rocks (4/24 or 4/25)</b>	
4/26	Trip 4 revisited – Key observations and interpretations (M.H.)	13. Maps, time-stratigraphic relations & geologic reconstructions
4/28	Mesozoic and Cenozoic Geology of Central Texas (M.H.)	
5/3	Field Trip 4 Debrief (M.H.)	14. Lab Final
5/5	Course Evaluation and Review (MH & B.H.)	
TBA	<b>Final Exam</b>	

\* Lab conducted outdoors, prepare accordingly.  
(B.H.) – Dr. Brian Horton  
(M.H.) - Dr. Mark Heper;

GEO 420K - EQUIPMENT LIST

**THESE MATERIALS ARE REQUIRED** and most are available in a single course packet for sale at the UT Co-Op Art Supply store. This packet contains the least expensive versions of the items that YOU WILL NEED for the class. **PLEASE PURCHASE THE COURSE PACKET** and *don't shop for alternatives*.

**REQUIRED MATERIALS (\* denotes in course packet)**

\*Protractor Ruler 6"

\*Metric Protractor Ruler 6"

\*Field notebook

\*Hand Lens

Compass – please install the Field Move Clino App on your smart phone; see Dr. Helper if you don't have one

Estwing Rock Hammer – not in course packet

Covered clipboard – will construct during Lab 1 or 2

\*12ct. Crayola Coloring Pencils

\*0.5mm Mechanical Pencil

\*F Lead (12ct.)

\*Pentel Pen .3

\*Pentel Pen .6

\*Sharpie Fine pt (2)

\*Sharpie Ultra Fine pt.

1oz. Bottle

Erasers/liquid paper

Canteen (1 or 2 one-quart canteens)

Watch

Knapsack or carrying bag

Grain size scale card – available in the JSG undergraduate office

**DESIRABLE MATERIALS:**

Rainwear

Aspirin, chapstick, bandaids, sunscreen or tanning lotion, insect repellent, etc.

Toilet paper

**PROHIBITED ITEMS:**

Firearms

Alcoholic beverages in University vehicles

Controlled substances and narcotics