

GEOMORPHOLOGY
GEO 3325, Spring 2016
MW 11:00am – 12:20pm, ELA 316

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Office Hours: M & T 1:00-2:30, or by appointment

COURSE DESCRIPTION

This course in Geomorphology investigates linkages between landscape forms and processes with emphasis on weathering, fluvial, aeolian, karst, and coastal processes. There will be various activities, including fieldwork, where students will demonstrate their grasp on fundamental processes in geomorphology.

CATALOG DESCRIPTION

This course provides a study of landforms, the processes and materials that form them and change them over time. Students will be introduced to bibliographic research and the interpretation of landforms and landscapes in the field from photographs or maps. Prerequisite: GEO 2410 or GEOL 1410 or equivalents with a grade of “C” or higher.

Student Goals and Objectives

- Understand the major concepts, terms, principles, and tools used by geomorphologists to evaluate landscape forms and processes.
- Gain an in-depth knowledge of and be able to explain key weathering, fluvial, aeolian, karst, and coastal processes.
- Acquire experience in geomorphic fieldwork and analyzing field data.
- Learn how to work as a productive, collaborative team to solve problems and communicate results.

Required Textbook: Process Geomorphology (4th or 5th ed.) by D.F. Ritter, C.R. Kochel, J.R. Miller; Waveland Press. Supplemental readings will be posted to TRACS.

Webpage: The page can be found on our TRACS course site. On the web page you will find supplemental readings, lectures, and additional information on course projects and fieldtrips.

Grading: Your grade in the course will be determined by how many points you accrue out of the total possible 100 points. The final letter grades will be assigned as follows: A = 90-100, B = 80-89, C = 70-79, D = 60-69, F = <60. The points are allocated as follows:

Attendance	5 points
Google Earth projects	25 points
Field projects	20 points
Final Project	20 points
Midterm Exam	15 points
<u>Final exam</u>	<u>15 points</u>
TOTAL	100 points

Attendance: You are required to attend all classes. After two unexcused absences, each further unexcused absence will result in a 1 point deduction from your attendance grade. If you do not have more than two unexcused absences, you receive the full 5 points.

Google Earth projects

There will be five homework assignments (worth 5 pts each) that use Google Earth to explore geomorphic concepts, processes, and landforms. Students are highly encouraged to work on these in two-person teams, but assignments can be done individually. Two-person teams only need to turn in one assignment for the team. **All assignments must be typed.** If you have never used Google Earth before, make sure you do the tutorials on

<https://support.google.com/earth/answer/176576?hl=en>. You can also download the latest version of Google Earth here. In case you need further help, see me during office hours.

Exams

There will be a Midterm Exam and a cumulative Final Exam. The date of the midterm exam is **Monday, February 22**. The date of the final exam is **Monday, May 2**, 11:00 – 12:20. The exams will be a combination of multiple choice and short answer. If you miss an exam with an excused absence, an alternate exam will be given. There are no make-up exams for unexcused absences.

Field Projects

There will be 2 field projects, one focused on the San Marcos River and one focused on Enchanted Rock State Natural Area and Pedernales Falls State Park. The San Marcos River project will use data we collect from the field (during class time) to quantify fluvial geomorphic processes. The Enchanted Rock project will involve an all-day Friday field trip (with a complementary assignment) where students will experience a variety of geomorphic landforms and processes. Those not able to attend the Friday field trip will be given an alternate assignment.

Final Project

Given this is the 100th anniversary of the National Park Service, your final project will be to describe the geomorphology of a National Park of your choice. You can work in 2-3 person teams; no more than 3 and no individual projects. The project will need to include a GoogleEarth component, a geomorphic map, and at least three citations of peer-reviewed literature. The format of the project will be a poster that will be displayed the final week of classes. More project details will be provided the first day of class. During the final week of class, you will give an oral presentation of your project and poster. This final project is worth 20% of your overall grade and will be evaluated by the quality of the poster and presentation, which includes: accuracy, creativity, writing, use of graphics, overall visual appeal, presentation delivery, and student's ability to answer question about project.

Late Assignments: Late work will be accepted but there will be a grade penalty that increases with each day past the due date.

Extra credit: There will be no extra credit in this course, but you are encouraged to pursue interests related to Geomorphology throughout the course and the rest of your career.

Course Policies

Attendance Policy: You are required to attend all classes. After two unexcused absences, each further unexcused absence will result in a 1 point deduction from your attendance grade. You are responsible for all materials and announcements made in class. If absent, make sure you check the lecture on TRACS for announcements you missed in class.

Electronic Devices: Electronic devices such as laptops and tablets (but NOT smartphones) are allowed in class as long as they are being used for viewing class materials and taking notes. If you are caught using electronic devices for any other reason, then you will forfeit your right to use electronic devices in class for the rest of the semester. These other reasons include, but are not limited to, social networking, texting, email, and viewing non-class material. If I find that your electronic device is distracting or prevents you from paying attention in class, I will ask you to refrain from its use. If you are expecting a life and death announcement from an immediate family member, please notify me before class of that situation.

Learning Outcomes: The Department of Geography's Student Learning Outcomes for all departmental programs may be reviewed at: <http://www.geo.txstate.edu/about/apr.html>.

Texas State University Honor Code (<http://www.txstate.edu/effective/upps/upps-07-10-01.html>)

*Learning and teaching take place best in an atmosphere of intellectual fair-minded openness. All members of the academic community are responsible for supporting freedom and openness through rigorous personal standards of honesty and fairness. Plagiarism and other forms of academic dishonesty undermine the very purpose of the university and diminish the value of an education. Specific sanctions for academic dishonesty are outlined in **Texas State Student Handbook**.*

Students with Special Needs/Disabilities: If you have a condition that requires special accommodation (as documented by the Office of Disability Services) in order to successfully complete the course, you must notify the Office of Disability Services (located at LBJ 5-5.1; ph. 512.245.3451) **AND the instructor** in a written memo (or email) before the end of the second week of classes. Failure to do so may result in the necessary accommodations not being made. *Texas State University San Marcos is dedicated to providing these students with necessary academic adjustments and auxiliary aids to facilitate their participation and performance in the classroom* (<http://www.txstate.edu/effective/upps/upps-07-11-01.html>).

Academic Testing for Students with Disabilities (<http://www.txstate.edu/trec/attd/accessAtsdTS.html>). *Students who are approved for testing accommodations have the option of using Academic Testing for Students with Disabilities (ATSD) office to take in-class tests or quizzes with their accommodations. Any student who schedules a test(s) with ATSD must schedule tests during the in-class scheduled test time (or seek an exception from the instructor) and are expected to take the test at ATSD. If a student schedules to take test with ATSD but decides that they will take the test in the classroom, the student will be responsible for notifying the ATSD and the instructor prior to the class start time.*

Professionalism: Our society considers a “professional” as a person who is responsible for the quality, integrity, and implications of his/her work. In the Department of Geography, we consider our students to be “professionals in training.” Course requirements are intended to bring the conduct and the quality of work of students in our programs up to professional standards. Students are responsible for attending class on time, reading the assignments, and completing the assigned projects on time in an aesthetic and thorough manner. We assume that students are aware of, and practice common courtesy and the consideration of others that are

necessary for a civil society and that are expected of professional persons. For additional information on Texas State University policy on student conduct, we encourage you to consult the university Policy and Procedures Statement on: Courteous Behavior, Classroom Civility, Classroom Disruption, Suspension from Class and Sexual Harassment.

<http://www.provost.txstate.edu/pps/policy-and-procedure-statements/4-teaching/pp4-02.html>.

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COURSE TOPICS AND TENTATIVE SCHEDULE

Date	Topic	<u>Readings (before class)</u>
Jan 20	Introduction and History of Geomorphology	
Jan 25	Geomorphic concepts	<u>Ch 1; Equilibrium excerpt</u>
Jan 27	Endogenic & Exogenic controls	<u>Ch 2</u>
Feb 1	Weathering	<u>Ch 3</u>
Feb 3	Soil properties	<u>Ch 4</u>
Feb 8	Soil Movement	
Feb 10	Drainage Basins	<u>Ch 5</u>
Feb 15	Fluvial Processes & Landforms	<u>Ch 6; Schumm article</u>
Feb 17	Sediment Transport	<u>Ch 7 to p. 274</u>
Feb 22	Midterm Exam	
Feb 24	San Marcos River Ex—meet at river below Salt Grass	
Feb 29	San Marcos River Ex—meet at river below Salt Grass	
Mar 2	San Marcos River continued – meet in classroom	
Mar 7	Aeolian Processes & Landforms	<u>Ch 8</u>
Mar 9	Karst	<u>Ch 12</u>
Mar 14	NO CLASS – Spring Break	
Mar 16	NO CLASS – Spring Break	
Mar 21	Glacial	<u>Ch 9</u>
Mar 23	Coastal – Part 1	<u>Ch 13</u>
Mar 28	NO CLASS – Work on GoogleEarth assignment	
Mar 30	NO CLASS – Work on Final Project	

Apr 4 Coastal – Part 2
Apr 6 Biogeomorphology & NZ
Apr 8 Fieldtrip to Enchanted Rock and Pedernales Falls

Apr 11 Lake Geomorphology
Apr 13 EcoGeomorphology Reading TBA

Apr 18 NO CLASS – Work on Final Project
Apr 20 NO CLASS – Work on Final Project

Apr 25 Final Project Presentations
Apr 27 Final Project Presentations; Course Review

May 2 FINAL EXAM (Comprehensive)