

TEXAS A&M UNIVERSITY - CORPUS CHRISTI  
COLLEGE OF SCIENCE AND TECHNOLOGY

GEOLOGY 3326 - INTRODUCTION TO GEOLOGICAL FIELD METHODS  
Fall 2008

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Class Time and Place: Monday and Wednesday, 1:00 p.m. – 1:50 p.m., BH 128

Office hours

By appointment

Course Description

This course will introduce you to the basic techniques of geological field work. The course will teach note taking in the field, proper use of Brunton compass and GPS, measuring and describing rock units, and technical writing. Reports and small-area maps will be produced from the field notes.

Audience

Undergraduate students in Geology and Environmental Sciences

Student Learning Outcomes

This class is designed to introduce you to the basic techniques of geologic field work. Upon successful completion of this course you should be familiar with:

- the observation, measurement, and description of rock units in igneous, sedimentary, and metamorphic terrains,
- note-taking in the field,
- the proper use of a geological compass
- the presentation of geologic data, and
- report writing.

Course Requirements

Physical Geology (1403), Historical Geology (1404), Mineralogy (3411, can be taken concurrently)

Instructional Methods and Activities

The class will meet once per week during the semester for 50 minutes to cover the theoretical and practical aspects of geological field techniques. Some activities will take place on campus outside the class room. This course also includes 7 days of field exercises that will take place on 4 weekends throughout the semester. Class lectures prepare you for the field trips and for working the field trip assignments.

### Evaluation and Grade Assignment

Grades will be based on

A) Reports/field exercises: 70%

B) Your performance in the field, i.e. how you move in the field, address the rock units, strategize your data collection, etc., as assessed through your interaction with the instructors: 10% of grade

B) Homework Assignments: 20% of grade

No extra credit.

### Class and field trip policies

We will make every effort to make this course a positive, fun, and safe learning experience. To achieve this goal, we have to ask all students to participate and to adhere to established class policies. This includes that you engage actively in camp activities such as cooking and clean up. Please respect sleeping hours between 10 pm and 6 am by keeping the noise down. By signing up for this class you agree to refrain from any activities that expose you or others to unnecessary risk. The ultimate decision as to what behavior constitutes a risk is solely with the instructors. We will be camping and working in state parks. It is your responsibility to familiarize yourself with all applicable laws, regulations, and policies. This includes minimizing your impact on the natural environment and any unnecessary disturbance of the wild life. These rules apply to the entire duration of the trips. Violations may result in a failing grade. While group discussion and collaboration is encouraged during field trips and class exercises, the work you hand in is expected to be yours. The use of cell phones is not allowed in class. The syllabus and course policies are subject to change as announced during class or by e-mail. It is your responsibility to provide a working e-mail address and to check your e-mail daily.

### Attendance policy

Attendance on a regular basis will be essential to the successful completion of the course. There is no provision for making up late and/or missed work. It is your responsibility to obtain notes and announcements from fellow students in the event you miss a class.

Lecture: A sign-in sheet will circulate at the beginning of each lecture. No instructor notification or permission is needed for up to two absences during the course of the semester. Three or more absences will result in a failing grade. Exceptions are granted only in cases of illness or under other unforeseeable circumstances and require a written petition with supporting documentation (e.g. doctor's statement).

Field trips: Attendance of the entire trip is required to obtain full credit on the trip assignment. Vehicles will leave at the specified time even if you oversleep or are late. There will be no later opportunities to make up missed field trips. Transportation will be provided in university vehicles. University policy does not allow the use of private vehicles. Please note that two weekend trips are scheduled, and you will need to bring overnight gear (details to be provided in class).

### University policies

By enrolling in this course you agree to follow university policies as stated in the Course Catalog and in the Student Handbook, including policies concerning student conduct,

integrity and honesty, and special needs. University alcohol and drug policies are strictly enforced.

### Supplies

You will need the following items during class sessions and on field trips:

- A bound notebook (with at least 20-30 free pages, no loose pages or note pads)
- Mechanical pencil (cheap quality o.k., get a spare one), lead size of 0.5 mm or finer
- Colored pencils
- Metric ruler (cm/mm markings)
- Protractor or a ruler/protractor
- Eraser (get a good one)
- Pencil sharpener
- 10 sheets of metric graph paper (cm/mm ruling)
- Pad of Vellum or heavy tracing paper

### Schedule of Topics

Week 1: Maps: Dimensions and scales

Week 2: The Brunton Compass I: Basics, Triangulating

**Week 2: Field Exercise I: Orientation in the field, pacing, triangulation**

Week 3: Measured sections and describing rocks

Week 3: Describing stratigraphic sections, use of the Jacob's staff

**Week 3: Field Exercise II: Measured sections of sedimentary rocks (1 field day)**

Week 4: The Brunton Compass II: Strike, dip, trend, plunge

Week 5: Stereo Diagrams and Rose Diagrams

Week 6: No class

Week 7: Data presentation, plotting, illustrations

**Week 8: Field Exercise II: Strike and dip measurements, field sketches, measuring unit thickness (2 field days)**

Week 9: Use of Contour Maps

Week 10: Geologic Maps, Cross-sections, and Correlations

**Week 10: Field Exercise IV: Cross-cutting relationships, geologic mapping (3 field days)**

Week 11: Report writing techniques

Week 12: Report preparation

Week 13: No class

Week 14: Report presentations