

1-2014

GEO 231.01: Geosciences Field Methods

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G231 Geoscience Field Methods

Syllabus

Spring, 2014

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This course is designed to acquaint you with the documentation, analysis, and interpretation of geology in the field and the construction and use of maps as repositories of geologic information. Our normal class schedule will entail one weekly meeting on Thursday afternoons from 1:10-5:00 PM. In addition, we will meet Tuesdays 2:10-3:00 PM for additional information transfer and instructor-assisted learning. During the first half of the semester, we will mostly work indoors. During the second half of the semester, we will spend more time outdoors. Most Thursdays, we will return to campus by 5PM. However, on several of the outings (marked on the *tentative* schedule below), it is possible that we may not return to campus until around 6PM. Please plan accordingly.

Each week, an exercise will be assigned. Unless otherwise indicated each weekly exercise will be due in its entirety the following Thursday at the beginning of class time (i.e., at 1:10PM). For some of these exercises, you will be encouraged to work in teams of 2 or 3 (max), in order to develop your interpersonal working skills. In such cases, each team may turn in a single assignment. In addition to the weekly assignments given on Thursday, we will have a brief quiz most Tuesdays. The quizzes are administered to make sure you are keeping up with the class materials.

Penalty for unexcused absences and late work:

The point of this class is to learn how to observe, understand, and document geology in the field. Therefore each of the Thursday outings is required, and I also expect you to show up for each one hour meeting on Tuesday. I will take attendance at each of the Thursday sessions, and each unexcused absence will drop your grade for that project by 50%. An excused absence is an emergency (personal or family) or sickness. Please be sure to email or phone me prior to missing class, so I know that you will not be present.

Late assignments drag down the entire class and make it difficult to move forward with the material at a constant pace. Unless otherwise indicated, all assignments are due at the beginning of the Thursday class period the following week. Unexcused late assignments will not be graded and will automatically receive a zero.

Reading:

Much of the reading for this class will come from the book *Geological Field Techniques* by Angela L Coe. This is an excellent guide to all sorts of field geologic work; I recommend you keep it at the end of the semester and make it part of your permanent library.

Grading System:

Your final grade will be based on the following: 1) Thursday field exercises and supplementary in-class exercises (70% of final grade); 2) weekly quizzes (15% of final grade); 3) final exam (15% of final grade).

Course Web Site:

Please be aware that much of the class material (exercise descriptions, supplementary information) will be posted on Moodle.

GEO231 Tentative Schedule (subject to modification):

WEEK	DATE	EXERCISE / ACTIVITY	READING (Coe)
1	Jan 28 and 30	Review of basic Earth materials, Montana stratigraphy	Ch. 1, 2, 3, and 4
2	Feb 4 and 6	Intro to geologic maps and geologic cross-sections	
3	Feb 11 and 13	Geologic maps and cross-sections continued	Ch. 6
4	Feb 18 and 20	Geology of UM campus, hydrogeology exercise	Ch. 8
5	Feb 25 and 27	Pace and compass mapping exercise on campus	
6	March 4 and 6	Intro to stereonet; Structural analysis of Mount Shields Fm., Kim Williams Trail	
7	March 11 and 13	Beavertail Hill: Intro to relative age dating	Ch. 9
8	March 18 and 20	Total Station/computer	
9	March 25 and 27		
10	April 1 and 3	Geologic mapping of UM campus I	
11	April 8 and 10	Geologic mapping of UM campus II	
12	April 15 and 17	Rattler Gulch – structural geology I and intro to	Ch. 10
13	April 22 and 24	Rattler Gulch - structural geology II	
14	April 29 and May 1	Geologic mapping of Blue Mountain Rec area I	Ch. 10
15	May 6 and 8	Geologic mapping of Blue Mountain Rec area II	Ch. 10
16	May 14	Final Exam – Wed., May 14 1:10 – 3:10PM	

An important note about academic misconduct:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

All students need to be familiar with the Student Academic Conduct Code. The Code is available for review online at <http://life.umt.edu/vpsa/documents/StudentConductCode1.pdf>