

**Geol 210: Regional Field Geology
Geology of the Pacific Northwest
Spring 2011**

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Ofc. Hrs: By appointment or, MWF 8-9 or T Th 9-10
Course Web Page: <http://campus.albion.edu/geol210>

Course Information
Class Time Tues 7:10-9:00pm
Classroom Palenske 123

Other participating faculty: Carrie Menold and Mick McRivette

Required Texts:

Soennichsen, J.R., 2008, Bretz's flood: the remarkable story of a rebel geologist and the world's greatest flood, Sasquatch Books, 320 p.

Williams, H., 2002, The restless Northwest: a geological story, WSU press, Pullman, WA, 163 p. Field notebook (bookstore)

Course Description:

A field study of the structure and stratigraphy of selected geologic provinces. During the second half of the spring semester the class will meet once a week to discuss readings related to the geology of the field study. The field study itself will last for eight to ten days typically beginning the day after commencement in May. Pre-Requisites: Either Geology 101 or 103, or permission of the instructor. (0.5 units)

The selected geologic region for the spring 2011 class is the Pacific NW area of the U.S. (focusing on Washington state). In weekly seminars, beginning after spring break, the class will learn about aspects of the geology of this region. We will examine tectonic evolution, magmatism in Cascades and Columbia Plateau, and Quaternary history of glaciations and megaflooding. The field trip will depart Michigan on May 9 and run until May 23. The trip cost is \$600 and includes transportation by train and vans, lodging (camping mostly), and food while in Washington.

Learning Goals

In this course, students will ...

- Develop and apply geology field observation and note-taking skills
- Apply the techniques, skills, and knowledge gained from previous geology courses to make observations, interpretation, and explanations of the geology seen on the trip
- Understand the geological processes that have acted on the Pacific NW in space/time
- Be able to recognize and describe the rock types in the Pacific NW
- Be able to outline the events that comprise the geologic history of the Pacific NW
- Improve oral presentation and writing skills

Tentative Class Schedule

Month	Day	Topic	Activity
January	18	Introduction to Course	Geography of Pac. NW, Google Earth
January	25	Mystery of the Megafloods	Movie night
March	15	Overview of Geologic Evolution I- Mountain Building and Magmatism (Geologic History due)	Field Observations and Note-taking
	22	GSA meeting, no class	
	29	Mt. St. Helens (paper to read TBA)	Mt. St. Helens Film
April	5	Bretz's Flood discussion I	GPS, Air photos
	12	Bretz's Flood discussion II, mini-paper due (2 p.)	Bruntons, rock descriptions
	19	Student presentations I	
	26	Student presentations II	

Tentative Field Trip Itinerary

Date	Description
Mon., 5/9	Depart by Amtrak from Jackson, MI to Seattle, WA
5/11	Arrive in Seattle ; Seattle geology
5/12	Travel by van east on Hwy 2 through Cascades with stops along the way, stay in Wenatchee
5/13-5/14	Northern part of Scablands to Spokane
5/14-5/16	Walla Walla, Richmond, Columbia Gorge
5/17	Coastal Oregon and Washington
5/18-5/20	Mt. St. Helens and Cascades volcanism
5/21	Depart Seattle by Amtrak
Mon. 5/23	Arrive in Michigan

Grades

Grades will be based on the following attributes, approximately these proportions:

Classroom	Field Trip
10%: Attendance and Participation	15%: Participation during field trip
25%: Activities/exercises/mini-papers	35%: Field Notebook
15%: Presentation and Handout	

Class Attendance and Participation

Attendance is required. We are meeting as a class very few times, so it is critically important that you attend every class. In addition, each student is expected to contribute during class time by asking or answering questions and constructively adding to the discussions. Be prepared for class.

In-class exercises/mini-papers (25%)

There will be an assignment/activity for most of the class meetings that occur after spring break. These will include: a summary of tectonic and magmatic evolution of Pacific NW based on the Restless Northwest book, a mini-paper on the Bretz flood book, and field preparation activities.

Field Trip Presentation and Handout

In the last two class sessions, each student will prepare a 5 minute presentation to summarize your pre-trip project. This project gives you a chance to explore in detail some aspect of the geology of the Northwest. The main product will be a 2-4 page handout that summarizes the feature that you studied. Later in the semester, we will give you guidelines on possible topics, research strategies, and handout format. The topics will focus on places/features that we will see. Possible topics include:

- Geology of a specific region, area, place, park, trail, road, etc. (e.g., Ginko Petrified Forest State Park, US Highway 2, Rt 97, Spokane, Willapa Hills, Columbia River, Seattle, Willamette Valley, Mt. Rainier, off-shore marine geology, coastal features, off-shore geology)
- Geology of a specific rock formation or group (e.g., Ellensburg Formation, Grande Ronde Basalt formation) or feature (e.g., Straight Creek fault)
- Geology of a specific period of time (e.g., Miocene in Washington)
- Geology of a specific event(s) (e.g., glacial history, 1700 A.D. Quake, pre-1980 MSH, history, lahar history)
- Geologic hazards (volcanic, tsunami, landslide, earthquake)

There are many other possibilities. Topics that will be excluded are the 1980 Mt. St. Helens eruption and the Scablands floods.

The presentation will be a brief (5 min) summary of the handout. The handouts will be compiled into a folder/binder to take on the trip.

Field Notes

You will bring a field notebook on the field trip, and take detailed, careful notes. We will discuss expectations for your field notebook during class and on the field trip. The notebooks will be collected at the end of the trip and evaluated.

Field Trip Participation

The success of a field trip is dependent on the attitude and helpfulness of everyone. Therefore, your willingness to ask questions, be observant and alert, be prompt and timely, pitch in at camp, and generally make yourself useful will constitute a part of your grade. This includes participating in academic discussions and field exercises, but also in participating at camp each night and morning. The trips are extremely fun but can be stressful; your cooperation, cheerfulness, and willingness to help will be rewarded.

Other Policies

Accommodations

Here is the official Albion College disability statement: “Disability Statement: If you have a disability and may require accommodations or modifications in class instruction or course-related activities, please contact the Learning Support Center (LSC) staff who can arrange for reasonable accommodations for students who provide documentation of their disability/condition. If you are presently registered with the LSC and have requested accommodations through the LSC for this semester, please plan to meet with me as early as possible to discuss the best way to implement these accommodations in this class. The LSC is located on the third floor of the Seeley Mudd library or call 517-629-0825.” Obviously, as this is a field trip, a certain degree of physical activity will be required. Therefore, if you have a physical disability that might affect your ability to participate in moderate hiking, riding in vehicles for long periods of time, camping on the ground, etc. please let your professor know. We will make every reasonable effort to accommodate you.

Academic Honesty

This is the official Albion College statement on academic integrity: “As an academic community, Albion College is firmly committed to honor and integrity in the pursuit of knowledge. Therefore, as a member of this academic community, each student acknowledges responsibility for his or her actions and commits to the highest standards of integrity. In doing so, each student makes a covenant with the college not to engage in any form of academic dishonesty, fraud, cheating, or theft.” In this class, you are expected to do your own research, prepare your own presentation and handouts, cite all of your sources, and take your own notes. However, you are also expected to work with your classmates throughout the class. Your words should be your own (except when you are quoting or citing a source), but you can collaborate with your fellow students and instructors to clarify ideas and place them in your own words.

Non-discrimination in the Classroom

The classroom is a place of open discussion and critical examination of ideas. All students are expected to abide by the Albion College non-discrimination policy. If you do not feel comfortable in this class because of something anyone in the class (professor included) is doing or saying, let me know – in person, via email or telephone, by a note slipped under my office door, or any other way you feel comfortable.