



SIO 121GS- Geology of the Alps

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This 4-unit course constitutes one half of the curriculum for the Global Seminar in Bern this summer. It is designed to give you a more in-depth understanding of the geology of the Alps, with an emphasis on its geologic formation and evolution over the past 65 million years since the range was created during the late Mesozoic Alpine Orogeny. We will examine the tectonics of the region and subsequent geologic processes that have shaped it (e.g. glaciation). Classroom study will be strongly augmented with local field excursions. Students will develop a strong understanding of the geology, tectonics, glaciology, and geomorphology of the Alps region.

Class Organization and Grading:

This class will include weekly lectures, demonstrations, and discussions that will take place during the regularly assigned class periods. In addition, we will have several excursions in the field that will build on the lectures

Your grade will be based on the following:

- In class exercises (25%), quizzes (25%), homework and field exercises (75%)
- Final exam (25%)

Learning Goals:

Students will be able to:

- Identify geologic features in the Alps region.
- Explain the relationship between tectonics and the geologic formations in the region.
- Define the various steps in the geologic evolution of the Alps.
- Distinguish between alpine features (geomorphologic) and categorize them with respect to their processes of formation.

(Continued)

SIO 121GS Schedule- Summer Session 2021

General Note: This syllabus is an outline of proposed events. It is subject to change; however, never without notification, and never to advance the due dates of assignments.

| <u>Date</u> | <u>Lecture Topics</u> |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1: 6/29 | Welcome and introduction Review of basic regional geography, geology and tectonics General tectonic and petrologic history of the region <i>Wednesday 7/4: Field trip (Geology around Luzerne and Mt. Pilatus)</i> |
| Week 2: 7/6 | Tectonic Structure of the Alps: Geology of the Central Alps, Eastern Alps <i>Tuesday 7/7 to Thursday 7/9: Field trip (Geology of the Bernese Alps- Interlaken, Lauterbrunnen Valley)</i> |
| Week 3: 7/13 | Geology of the Western Alps <i>Tuesday 7-14 to Thursday 7-16: Field Trip (Geology around Zermatt, Matterhorn, Klein Matterhorn and region)</i> |
| Week 4: 7/20 | Alpine Metamorphism Mesozoic and Cenozoic orogenic events <i>Wednesday 7-22: Field trip (Aletsch Glacier, Binn Valley)</i> |
| Week 5: 7-27 | Mass Wasting and rockslides Neotectonic processes Future geologic events <i>Tuesday 7-28: Field trip around Bern (local geology)</i> <i>Thursday 8-2: Final Exam</i> |