GEOL 451, Section 5420  
Summer Field Geology  
Credits: 6

**Instructor:** Dr. Joel DesOrmeau (jdesormeau@unr.edu)
**Dates:** May 20 to June 28, 2017
**Times:** 8:00am - 5:00pm, daily
**Website:** [http://www.unr.edu/geology/summer-field-camp](http://www.unr.edu/geology/summer-field-camp)
**Locations:** Multiple localities in eastern Nevada

**Description:** The Department of Geological Sciences and Engineering at the University of Nevada, Reno, offers GEOL 451 as a comprehensive, six-credit, five-week summer geology field camp class. Through a series of field-based exercises, students will integrate previous coursework in order to gain the ability to understand complex geologic field relations in three dimensions. The focus of the course is to develop advanced field skills, including lithologic, stratigraphic, and structural descriptions. Students will analyze, measure and characterize geologic materials, and synthesize this data to produce descriptive and interpretive written reports, generate geologic maps, and illustrate the geometries of deformed rocks using cross-sections. This course is enhanced by the incredible geologic setting of these exercises, which includes several world-class geologic sites in eastern Nevada, in the heart of the Basin-and-Range province, and in southern Utah. For the first and last weeks, we will be camping, while the remainder of the course we will utilize our field station in Ruth, Nevada. Especially memorable areas that we will visit include a variety of National Parks (i.e., Great Basin, Bryce, Zion).

**Exercises:** Our field camp exposes students to a wide variety of exercises, which are all founded in geologic mapping. Many of the exercises involve problems of practical significance (for example, applications to real-world problems such as active faulting). All field exercises are followed by writing up an accompanying report, in which students will produce new and unique products, including geologic maps, detailed lithologic descriptions, stratigraphic columns, geologic cross-sections, and structural interpretations. Exercises include:

1. Introductory exercises at UNR
   We will start off with a 2-day long series of exercises that are designed as an introduction, in order to brush-up on your rock description, map location, and Brunton compass skills. By the end of this exercise, we hope to have everyone on the same page in terms of basic mapping skills. All instructors will take part in providing an overview of key concepts and requirements for successful completion of each mapping project.
2. Intro Mapping: Southern Utah
For our first major mapping exercise, we will spend 5 days working and camping in southern Utah. We will focus on basic mapping of Colorado Plateau stratigraphy and associated structures. We will spend a day stopping along some of the National Parks en route back to the Ruth Field Station.

3. Neotectonics: Eastern Nevada
This 4-day Quaternary surficial geology project will be conducted in eastern Nevada along Highway 50. This exercise will consist of several components, including an introduction to Basin-and-Range landforms, lacustrine and alluvial processes, and detailed trench investigations.

3. Intro to Basin and Range: Eastern Nevada
This 5-day mapping project will encompass more detailed mapping of Precambrian to Paleozoic stratigraphy, intrusives, and slightly more complex structures found with the Basin and Range.

4. Antelope Mountain: Eastern Nevada
This is a 5-day mapping project in the region between Eureka and Ely. Here, Tertiary volcanic rocks unconformably overlie Mississippian and Pennsylvanian sedimentary rocks that have an older history of folding. The complex field relations in this exercise will build upon your previous exercises and further develop your structural analysis skills, and your ability to map volcanic rocks that can change character over short distances.

5. Snake Range: Eastern Nevada
This 5-day mapping project, located near Great Basin National Park in eastern Nevada, will focus on mid-crustal rocks that comprise this well-studied metamorphic core complex. The ductilely deformed rocks exposed along the extensional detachment system provide an excellent opportunity to study metamorphic fabrics (foliation, lineation, sense of shear indicators, etc.).

**Field trips:** In addition to exercises, there will be several optional, day-long field excursions, to scenic areas including Great Basin National Park and the Ruby Mountains.

**Grading Scale:** 90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; Below 60% = F

**Mandatory readings and map assignments:** The instructors of each exercise will provide all required hand-outs in the field.

**Statement on Academic Dishonesty:** Cheating, plagiarism or otherwise obtaining grades under false pretenses constitute academic dishonesty according to the code of this university. Academic dishonesty will not be tolerated and penalties can include canceling a student's enrollment without a grade, giving an F for the course or for the assignment. For more details, see the University of Nevada, Reno General Catalog.
**Statement of Disability Services:** Any student with a disability needing academic adjustments or accommodations is requested to speak with me or the Disability Resource Center (Pennington Student Achievement Center, Suite 230) as soon as possible to arrange for appropriate accommodations.

**Statement on Audio and Video Recording:** Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.