

**SYLLABUS**  
**EES 341 LEHIGH FIELD CAMP (6 CREDITS)**  
**SUMMER SEMESTER 2025**  
**13 MAY – 24 MAY (ONLINE)**  
**28 MAY – 20 JUNE (FIELD)**

Director: Dr. Stephen Peters, Ph.D.; Department of Earth and Environmental Sciences  
144 STEPS, Phone: 610-758-3660; scp2@lehigh.edu.

Instructors: Dr. Frank J. Pazzaglia, Ph.D., Dr. Stephen Peters, Ph.D.

Staff: Graduate Student Teaching Assistants

Prerequisites: Significant progress towards a Bachelors Degree in Earth and Environmental Sciences. Coursework that provides good preparation includes an introductory or gateway course to Earth and Environmental Sciences (Physical Geology, Intro to Environmental Science or equivalent), Earth Materials (Mineralogy, Petrology), Structural Geology, Sedimentology-Stratigraphy, Hydrogeology, or similar courses. Content from courses in Ecology, Biology, and Climate Sciences are discussed throughout the course.

Texts: Optional: Geological field techniques, Coe, ISBN: 978-1-4443-3062-5 Paperback 336 pages, November 2010, Wiley-Blackwell. US \$59.95. We provide loaner copies in each vehicle.

Scope: Synoptic, capstone field experience for Earth and Environmental Science majors, inclusive of the field of Geology. Instruction on how to make, read, and interpret geologic maps and how to envision field problems and collect data. Focuses on making and recording field observations, discerning field relationships, and the concepts of geological mapping as a vehicle towards development of a professional earth scientist.

Format: Several multi-day, multi-partner field projects, instructed by one or more faculty, and one or more staff. Projects contain an in the field group component, and a map drafting and writing individual component.

Grading: Grades are based on the quality of projects produced during all of the exercises. Students are evaluated based on their own individual work. The breakdown is:

Cross country trip, landscape evolution, notebook, class participation (first half)	10%
Geologic mapping and Mesozoic stratigraphy (Badlands)	15%
Paleozoic stratigraphy and structure mapping (Bighorn Mtns)	20%
Tetons, science communication	10%
Active tectonics, glacial, alluvial, and fluvial landforms, large scale temporal integration	20%
Metamorphic core complex, large scale spatial integration	15%
Volcanic rocks and active tectonics (Yellowstone), notebook, class participation (second half)	10%

## 2025 Camp Schedule (updated Oct 4, 2024)

M 12 May Welcome meeting, time TBD, **virtual only**

M 12 May through F 23 May Site familiarization, skills acquisition, draft document preparation, **virtual only**

These initial two weeks of work will generate pre-visit materials for the projects at each of the field sites. Review of the analytical approaches and development of a strategy for each project. Introduction to field tools we plan to use, develop new electronic mapping skills including how to analyze field data, all of which enable efficient field time. These steps closely follow what a professional would do in preparation before visiting a field site. These weeks usually overlap with some final exams, commencement, and post-graduation celebrations. A few of the sessions may be synchronous, but most of the work will be independent and asynchronous. *These exercises must be completed before departure on the field portion of the camp.*

T 27 May Students arrive in person, Lehigh campus, 4pm Camp meeting

W 28 May Drive (470 mi) West from Bethlehem, PA to *East Harbor State Park*  
Pickups at:  
12:00 PM Dunkin Donuts, Hubbard, OH (Exit 234, I-80, near PA/OH State line)  
or a location along I-80 that is pre-arranged with the camp director during the registration process

R 29 May Drive (475 mi), *Camp Baraboo*  
Pickup at Chicago Airport (ORD), midday, by arrangement with camp director.  
Baraboo Syncline, Great Unconformity

F 30 May Van Hise Rock, Ablemans Quarry  
Drive (380 mi), *Camp Blue Mounds State Park*  
Quartzite discussion, tall grass prairie, buffalo range management

S 31 May Drive (350 mi), Arrive Badlands NP, *Camp Cedar Pass CG [2 nights]*.  
*Staff to resupply food in Mitchell.*  
Fossil stop in Sharps/Brule

Su 1 June Badlands – Cenozoic sedimentology and stratigraphy, Geologic map and cross section at Yellow Mounds focusing on topography and contacts/faults.  
Wall drug in late afternoon  
Drive back to campground (45 minutes)

M 2 June Drive to *Devils Tower* (~200 mi) via Rapid City, Scenic, S.D.  
*Resupply food and laundry in Rapid City.* Mt. Rushmore, Lead Gold Mine, Devil's Tower NM – shallow volcanic intrusives; Ponderosa Pine forest ecosystem. Evening at Devils Tower

T 3 June Drive (180 mi) *Bighorn Mountains, Camp Medicine Creek Campground. [3 nights]*  
Cross Bighorns. Alpine Doug-Fir and Sub-Alpine Fir forest.

W 4 June Tensleep, Mesozoic stratigraphic section measurements, analysis.

R 5 June Draft Tensleep section, Bonanza oil seep, geoarchaeology.

F 6 June Sheep Mountain fold map and analysis

S 7 June Sheep Mountain fault map and analysis

Su 8 June Sheep Mountain synthesis

M 9 June	Drive Tetons via Wind River Canyon, Dubois (290 mi), <i>Camp Gros Ventre Campground</i> [2 nights] Elk Ranch overlook, Snake River overlook, Glacier View overlook.
T 10 June	Tetons and Jackson, fault block, glacial context
W 11 June	Drive to Wildhorse, <i>Camp Wildhorse</i> [7 nights] Craters of the Moon National Monument (or Su June 16)
R 12 June	Surface processes project Day 1 – terraces and paleohydrology, remote imagery
F 13 June	Surface processes project Day 2 – terraces and paleohydrology, geophysics
S 14 June	Surface Processes Project Day 3 – glacial deposits; Wildhorse and Anderson Canyon.
Su 15 June	Surface Processes Synthesis; Metamorphic core complex 1 afternoon
M 16 June	Metamorphic core complex 2
T 17 June	Metamorphic core complex 3
W 18 June	Metamorphic core complex synthesis
R 19 June	West Yellowstone (138 miles, 3.5 hours) Craters of the Moon National Monument Setup camp at <i>Cabin Creek campground</i> in afternoon [2 nights] East entrance of Yellowstone, to Old Faithful, Volcanic rocks at Tuff Cliffs and Firehole Canyon drive.
F 20 June	Student inquiry at Yellowstone
S 21 June	Driving Day 1, drop-off at Billings Airport by arrangement, flights no earlier than 1pm, Stay Chamberlain SD hotel
Su 22 June	Driving Day 2, Stay Sturgis MI hotel
M 23 June	Driving Day 3, Arrive Lehigh ~4pm, Students depart.