SYLLABUS
EES 341 LEHIGH FIELD CAMP (6 CREDITS)
SUMMER SEMESTER 2022
31 MAY – 2 JULY

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. David Anastasio, Ph.D., Dr Katherine Glover, Ph.D., Dr. Francesco Pavano, Ph.D.

Staff: Four Teaching Assistants

Prerequisites: Introduction 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 equivalents. Deficiencies handled by petition.


Scope: Synoptic, capstone field experience for geology and Earth science majors. Instruction on how to make, read, and interpret geologic maps and how to envision field problems and collect data. Using of the field, field geologic relationships, and the concepts of geological mapping as the vehicle towards development of a professional earth scientist.

Format: Several multi-day, multi-partner field mapping 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) 10%
- Paleozoic stratigraphy and structure mapping (Bighorn Mtns) 20%
- Sequence stratigraphy (Bighorn Mtns) 15%
- Volcanic rocks and active tectonics (Yellowstone), notebook, class participation (second half) 5%
- Active tectonics, glacial, alluvial, and fluvial landforms, large scale temporal integration 20%
- Metamorphic core complex, large scale spatial integration 15%
- Tetons, wrap up 5%
**2022 Camp Schedule** (updated March 14, 2022)

T 31 May  
Students Arrive, 4pm Camp meeting

W 1 June  
Drive (470 mi) West from Bethlehem, PA to *East Harbor State Park*
Pickups at:
12:00 PM Truckworld, Hubbard, OH (I-80, PA/OH State line)
or a location along I-80 in PA pre-arranged with the camp director during the registration process

R 2 June  
Drive (475 mi), *Camp Baraboo*
Pickup at Chicago Airport
Baraboo Syncline, Great Unconformity

F 3 June  
Van Hise Rock, Abemans Quarry
Drive (380 mi), *Camp Blue Mounds State Park*
Quartzite discussion, tall grass prairie, buffalo range management

S 4 June  
Drive (350 mi), Arrive Badlands NP, *Camp Cedar Pass CG [3 nights].  Staff to resupply food in Mitchell.*

Su 5 June  
Badlands – K – Cenozoic sedimentology and stratigraphy, Geologic map and cross section at Yellow Mounds focusing on topography and contacts/faults.  *Wall Drug in the afternoon*

M 6 June  
Badlands – Fossils in the Sharps, Brule and Chadron Fms

T 7 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.*

W 8 June  
Drive (180 mi), *Willow Park Campsite.  [2 nights]*
Lunch at Willow Park; Afternoon on Tensleep Section – familiarize with the Mesozoic stratigraphic section.  Willow Park for the evening.  Alpine Doug-Fir and Sub-Alpine Fir forest.

R 9 June  
Morning on Tensleep Section – Finalize cross section and maps.
*Wind River Paleozoic Section, Hot Springs, Laundry.*

F 10 June  
Break camp, Drive Greybull, Sheep Mtn.  *Camp Ranger Creek.  [7 nights]*

S 11 June  
Sheep Mtn 1

Su 12 June  
Sheep Mtn 2

M 13 June  
Sheep Mtn 3

T 14 June  
Sheep Mtn wrap up

W 15 June  
Sequence stratigraphy 1 - introduction and mechanics of section measuring.

R 16 June  
Sequence stratigraphy 2 – Interpretation and writeup

F 17 June  
Break camp, drive to Cody, PM off, *Laundry, town night in Cody, Staff resupplies in Cody*

S 18 June  
East entrance Yellowstone (138 miles, 3.5 hours)
East entrance of Yellowstone, to Old Faithful, Volcanic rocks at Tuff Cliffs and Firehole Canyon drive.
Setup camp at *Cabin Creek campground in afternoon [2 nights]*
Su 19 June  Student inquiry at Yellowstone

M 20 June  Drive (280 mi) to Mackay.  *Wildhorse Campground [8 nights]*  
Hebgen Lake Fault scarp.  *Staff resupplies in Mackay,* students to camp by 4:00 PM.

T 21 June  Surface processes project Day 1 – terraces and paleohydrology

W 22 June  Surface Processes Project Day 2 – glacial deposits; Wildhorse and Anderson Canyon.

R 23 June  Surface Processes Project Day 3 – alluvial fans and fault scarp;

F 24 June  Surface Processes wrap up;

S 25 June  Core Complex project 1 – in camp.  Rock and mineral identification, identification of deformation 
fabrics; set-up of 3-D block diagram.

Su 26 June  Core Complex 2 Boulder FW hike

M 27 June  Core Complex 3 Summit HW hike

T 28 June  Core complex deliverables at Noon, 
Break camp Drive to Tetons

W 29 June  Tetons

R 30 June  Drop students at Jackson Hole Airport 
Driving Day 1

F 1 July  Driving Day 2.

S 2 July  Driving Day 3, Arrive Lehigh