

SYLLABUS
EES 341 LEHIGH FIELD CAMP (6 CREDITS)
SUMMER SEMESTER 2012
30 MAY – 03 JULY

- Director: Dr. F. J. Pazzaglia; Department of Earth and Environmental Sciences, 109c STEPS, Phone: 610-758-3667; fjp3@lehigh.edu.
- Co-Director David J. Anastasio; Department of Earth and Environmental Sciences, 224 STEPS, Phone: 610-758-3667; dja2@lehigh.edu
- Instructors: Dr. Claudio Berti, Dr. Edward B. Evenson, Dr. Steve Peters.
- Staff: Three TAs, quartermaster, camp commissary.
- 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, Ecology, Hydrogeology, or equivalents. Deficiencies handled by petition.
- Texts: Geological field techniques, Coe, ISBN: 978-1-4443-3062-5 Paperback 336 pages, November 2010, Wiley-Blackwell. US \$59.95.
- Scope: Synoptic, capstone field experience for geology and environmental science majors. Instruction on how to make, read, and interpret geologic maps and how to envision field problems and collect environmentally diagnostic data. Using of the field, field geologic relationships, and the concepts of geological mapping and environmental data as the vehicle towards development of a professional earth and environmental 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 project produced during three main integrated exercises, several smaller exercises, a strat measuring exercise, synthesis of map and environmental data, and exercises during the cross-country trip. The breakdown is:

Cross country trip, notebook, badlands	10%
Strat section exercise	10%
Pinedale (surficial geology, soils)	10%
Red Hills (basic mapping, x-section, landslides)	20%
Bannock, MT (advanced structural mapping, environmental of and old mining district)	20%
Idaho (crystalline rocks, structural interpretations, hydrology, active tectonics)	20%
Camp participation, group leadership, attitude	10%

	Sun 5/27	Mon 5/28	Tue 5/29	Wed 5/30	Thu 5/31
		<div style="border: 1px solid red; padding: 2px;"> Memorial Day </div>	<div style="border: 1px solid red; padding: 2px;"> John F. Kennedy's Birthday </div>	<div style="border: 1px solid black; padding: 2px;"> East Harbor </div>	<div style="border: 1px solid black; padding: 2px;"> Baraboo </div>
		<div style="border: 1px solid black; padding: 2px;"> Memorial Day </div>	<div style="border: 1px solid black; padding: 2px;"> Students arrive at Lehigh @ Lehigh </div>		
5am				<div style="border: 1px solid black; padding: 2px;"> Depart 5am - 6am </div>	
6am					
7am					
8am					<div style="border: 1px solid black; padding: 2px;"> Glacial Project at East Harbor @ East Harbor 7:30am - 8:30am </div>
12pm					<div style="border: 1px solid black; padding: 2px;"> Arrive Reststop Milepost 57 Indiana 12pm - 12:30pm </div>
1pm				<div style="border: 1px solid black; padding: 2px;"> Truck World 12:30pm - 1:30pm </div>	
					<div style="border: 1px solid black; padding: 2px;"> Hinsdale Oasis CST 1:30pm - 2pm </div>
4pm			<div style="border: 1px solid black; padding: 2px;"> Organizational Meeting @ 100 STEPS 4pm - 5pm </div>		
5pm				<div style="border: 1px solid black; padding: 2px;"> Arrive at East Harbor State Park @ East Harbor State Park 4:30pm - 5:30pm </div>	
6pm				<div style="border: 1px solid black; padding: 2px;"> Leaf description and Brunton Projects 5:30pm - 7pm </div>	<div style="border: 1px solid black; padding: 2px;"> Arrive Devil's Lake 5:30pm - 6:30pm </div>
9pm					<div style="border: 1px solid black; padding: 2px;"> Mid-Continent lecture 9pm - 10pm </div>

	Fri 6/1	Sat 6/2	Sun 6/3	Mon 6/4	Tue 6/5
	Blue Mounds	Badlands	Badlands	Devil's Tower	Boysen Reservoir
8am	Elephant Rocks 7:30am - 8:30am				
9am		Prairie Soil 8am - 9am	Badlands stratigraphy 8am - 12pm	Wall Drug 8:30am - 9:30am	
10am	Rock Springs and Van Hise Rock 9am - 11am				Morecroft rest stop 9am - 10am
11am		Mitchell, S.D. 10:30am - 11am			
12pm		Chamberlain, S.D. 11:30am - 12:30pm		Mt. Rushmore 11am - 11:30am	Buffalo, WY 11am - 11:30am
1pm	Lunch at River Bluff S.P. 1pm - 2pm		Badlands mapping 12pm - 3pm	Etta Pegmatite 11:30am - 12:30pm	
2pm		Badlands - Cedar Pass Campground MST 2pm - 3pm		Homestake Goldmine 2pm - 2:30pm	Tensleep - lunch 1pm - 1:30pm
3pm		Free exploration of the Badlands 3pm - 6pm			Tensleep section measuring 1:30pm - 5pm
4pm			Electronic mapping project 4pm - 5pm	Devil's Tower 4pm - 5:30pm	
5pm					
6pm	Luverne - Dinner 6pm - 7pm				
	6pm - 7pm Luverne - Dinner 7pm - 8pm Blue Mounds S.P.	9pm - 10pm Badlands lecture		9pm - 10pm Wyoming geology	7pm - 8pm Boysen Reservoir 9pm - 10pm Tacky Gift Contest

	Wed 6/6	Thu 6/7	Fri 6/8	Sat 6/9	Sun 6/10
	Thermopolis to Pinedale	Pinedale	Pinedale	Pinedale	Pinedale to Red Hills
8am	Wyoming section lecture 8am - 8:30am		Pinedale mapping - Half Moon Mountain 8am - 5pm	Pinedale mapping - Soda Lake area 8am - 5pm	Draft Pinedale maps 8am - 12pm
9am	Wind River Canyon stratigraphy 8:30am - 11:30am	Pinedale glacial lecture 9am - 11am			
10am					
11am		Pinedale glacial mapping; airphotos 11am - 5pm			
12pm	Shower at Thermopolis, clean up notebooks 12pm - 2pm				
1pm					
2pm	Drive to Pinedale 2pm - 6pm				
3pm					Tetons and Red Hills introduction, Kelly Warm Springs lecture 2:30pm - 4pm
4pm					
5pm					Set up Red Hills camp, dinner 5pm - 8pm
6pm		Pinedale airphoto map due 6pm - 6pm			
7pm - 8pm	Dinner at camp	6pm - 6pm Pinedale airphoto	7pm - 8:30pm Pinedale aquatic	7pm - 11pm Pinedale Town Night	
9pm - 11pm	Laundry at Pinedale	8pm - 10pm Pinedale cross-	9pm - 11pm Pinedale map		

	Mon 6/11	Tue 6/12	Wed 6/13	Thu 6/14	Fri 6/15
	Red Hills	Red Hills	Red Hills	Flag Day Red Hills	Red Hills - Tetons - Jackson
8am	Red Hills , Horsetail section walk 8am - 12pm	Red Hills oil-well and cross-section hike 8am - 11am	Red Hills Nugget knob 8am - 5pm	Red Hills Horsetail mapping 8am - 5pm	Red Hills draft map 8am - 11:30am
11am					
12pm					
1pm	Red Hills postage stamp map 1pm - 5pm				Jenny Lake - Hidden Falls hike 12:30pm - 3:30pm
2pm					
3pm					
4pm					Jackson laundry 4pm - 6pm
5pm					
6pm					Jackson aquatic center 6pm - 7:30pm
7pm					
8pm	Strat column correlation exercise 8pm - 10pm	Red Hills cross-section 8pm - 11pm	Stereonet exercise 8pm - 10pm	Red Hills draft map 8pm - 11pm	Jackson Town night 7:30pm - 11pm
9pm					

	Sat 6/16	Sun 6/17	Mon 6/18	Tue 6/19	Wed 6/20
	Red Hills to Yellowstone	Father's Day Yellowstone	Yellowstone to Bannock	Bannock	Bannock
8am		Yellowstone free day 8am - 8pm		Introduction to Bannock project 8am - 9am	Bannock Mapping 2 8am - 5pm
9am			Tuff Cliffs and Firehole Drive volcanics 8:30am - 10am		
10am	Depart Red Hills 9:30am - 9:30am			Bannock Mapping 1 9am - 5pm	
11am			Hebgen Lake and landslide 10:30am - 11:30am		
12pm					
1pm	Arrive Madison Campground, YNP 1pm - 2pm				
2pm	Yellowstone free afternoon and evening 2pm - 10pm				
3pm			Tour of Little Sheep Creek via Centennial Valley 3pm - 6pm		
4pm					
5pm					
6pm					
		9pm - 10pm Yellowstone lecture	7pm - 8pm Arrive, set up camp at		

	Thu 6/21	Fri 6/22	Sat 6/23	Sun 6/24
	Bannock	Bannock to Dillon	Bannock to Mackay	Idaho
8am	Bannock mapping 3 8am - 5pm	Bannock drafting 8am - 12pm		Boulder Canyon hike 8am - 5pm
9am				
10am			Depart Bannock 9:30am - 9:30am	
11am				
12pm				
1pm		Bannock minig district historic tour 1pm - 4pm		
2pm			Mackay 2pm - 3pm	
3pm				
4pm				
5pm		Dillon laundry 5pm - 7pm		
6pm			Wildhorse 5:30pm - 6:30pm	
7pm		Dillon town night 7pm - 11pm Dillon town night	8pm - 10pm Introduction to Core Complexes	

	Mon 6/25	Tue 6/26	Wed 6/27	Thu 6/28
	Idaho	Idaho	Idaho	Idaho
8am	Kane Creek hike and Summit hike 8am - 5pm	Draft core complex project 8am - 11:30am	Little Cedar Creek fan mapping and paleohydrology 8am - 4pm	
9am				
10am				
11am				
12pm				
1pm		Active tectonics project - Cedar Creek Fan fault scarp 12:30pm - 5pm		
4pm				
5pm			Mackay vehicle servicing and town night 4pm - 11pm	
8pm		Introduction to paleohydrology project 8pm - 10pm		
9pm				
10pm				

	Fri 6/29	Sat 6/30	Sun 7/1	Mon 7/2
	Idaho	Craters - Mackay - Final Party	Depart	Enroute
7am			Depart 7am - 8am	
8am	Draft Paleohydrology project 8am - 11:30am	Depart and group picture 8:30am - 9:30am		
9am				
10am				
11am		Mackay - brunch - set up camp at school 10:30am - 12pm		
12pm	Course evaluations - student voting 11:30am - 12:30pm			
1pm	Free afternoon 1pm - 6pm	Craters of the Moon tour 1pm - 4pm		
4pm		Showers 4pm - 6pm		
5pm				
6pm	Break down camp 6pm - 9pm			
7pm		Final Party 7pm - 9pm		
8pm				

	Tue 7/3	Wed 7/4	Thu 7/5	Fri 7/6
	Arrive Lehigh	Independence Day		
7am				
8am				
9am				
10am				
11am				
12pm				
1pm				
2pm				
3pm				
4pm				
5pm				