## Short-Term Field Study Program Information

## Please provide the following information:

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Field Study Program Name:	Interdisciplinary Field Program
Field Study (FSTY) Course ID:	FSTY 1025
Field Study (FSTY) Course CRN:	TBD
Semester Program will be Offered:	Summer 2022
Part of Term (Select Part of Term that most closely aligns with program dates)*:	Extended Summer Session
Click Here for Session Dates ("Classes Begin" and "Classes End")	
Location of Field Study:	Various locations throughout the USA (this is a mobile program)
Program Director/Contact Name:	Julia Cox, Paul Schroeder
Program Director/Contact Phone Number:	706-542-2652
Program Director/Contact Email Address:	juliaec@uga.edu; schroe@uga.edu
Program Start Date (First meeting with enrolled students ):	6/3/2022
Program End Date (Last meeting with enrolled students ):	8/1/2022
Travel Start Date:	6/3/2022
Travel End Date:	8/1/2022
Anticipated Number of Total Students Participating in Program:	16-20
Anticipated Number of UGA Students:	16-20
Anticipated Number of Transient Students:	0-2
Anticipated Number of Undergraduate Students in the Program:	16-20
Total Number of Credit Hours Taken by Each Undergraduate Student:	11-15
Anticipated Number of Graduate Students in the Program:	0
Total Number of Credit Hours Taken by Each Graduate Student:	NA

## Please list each course offered through the program on a separate row below:

Course Title	Course Prefix	Course Number	Credit Hours	Schedule Type	Instructor(s)	Department of Instructor(s)	Course Start Date	Course End Date	Total Lecture Hours	Total Field/ Lab Hours	Total Contact Hours**			
Introduction to Anthropology (Honors)	ANTH	2120H	3	Lecture	Thompson, Gragson	Crop & Soil, Anthropology	6/3/2022	7/30/2022						
Indians of North America	ANTH	4020	3	Lecture	Thompson, Gragson	Crop & Soil, Anthropology	6/3/2022	7/30/2022	72.5	8.25 76.625				
Program requires each student register for 3hrs ANTH with options above.										ures and participate in all activities.				
Ecological Basis of Environmental Issues (Honors)	ECOL	1000H	3	Lecture	Kaitlin Farrell, GTAs	Ecology	6/3/2022	7/30/2022						
Ecological Basis of Environmental Issues Laboratory	ECOL	1000L	1	Supervised Lab	Kaitlin Farrell, GTAs	Ecology	6/3/2022	7/30/2022	89.25	25.75	102.125			
Ecology of North America + Lab	ECOL	4160-4160L	4	Lecture	Kaitlin Farrell, GTAs	Ecology	6/3/2022	7/30/2022						
Program requires each student register for 4hrs	ECOL with options	above.							ECOL courses overlap in conte	nt. All students are required to attend all lectu	ires and participate in all activities.			
Physical Geology (Honors) + Lab	GEOL	2350H-2350L	4	Lecture	Cox, Dvoracek, Milewski	Geology, Office of Research CAIS	6/3/2022	7/30/2022						
Historical Geology (Honors) + Lab	GEOL	2360H-2360L	4	Lecture	Cox, Dvoracek, Milewski	Geology, Office of Research CAIS	6/3/2022	7/30/2022	134	34	151			
Geology of North America + Lab	GEOL	4330-4330L	4	Lecture	Cox, Dvoracek, Milewski	Geology, Office of Research CAIS	6/3/2022	7/30/2022						
Program requires each student register for 4-8hr						GEOL courses overlap in conte	nt. All students are required to attend all lectu	ires and participate in all activities.						

\*Please work with department schedulers and OIE to ensure that all academic courses are scheduled in the same Part of Term as the program FSTY course.

\*\*Total Contact Hours = Total Lecture Hours + (Total Field Hours / 2) Courses require 12.5 contact hours for each credit hour earned

Please also complete the Academic Itinerary found on the second worksheet of this document. For questions, please contact the Office of Curriculum Systems at csfieldstudy@uga.edu or 706-542-6358.

## Academic Itinerary

Field Study Program Name: Interdisciplinary Field Program Field Study (FSTY) Course ID: , FSTY 1025 Program Start and End Da Instructors and Courses T

Dates:	6/3/2022 - 8/1/2022	
s Taught:	Instructor	Course(s) Taught
	Jennifer Thompson et al.	ANTH 2120H, ANTH 4020
	Kaitlin Farrell et al.	ECOL 1000H, ECOL 1000L, ECOL 4160-4160L
	Julia Cox et al.	GEOL 2350H-2350L, GEOL 2360H-2360L, GEOL 4330-4330L

Each course has 3-4 instructors alternately spending 2-4 weeks with the program. The listed primary instuctor coordinates with all faculty to ensure content coverage, learning outcomes, and contact hours. The courses overlap in content. All students are required to attend all lectures and participate in all activities during the program.

Faculty and students do everything together as a group. Instructors are always present and available to students (on hikes and tours, in camp, etc).

The IFP is academically rigorous with very little down time for students, as shown in the schedule below.

				GEOL			ECOL			ANTH		
Day	Time	Activity	Contact Hour Notes	Direct	Supervised	Total Hours	Direct	Supervised	Total Hours	Direct	Supervised	Total Hours
	-		-	134	34	151	89.25	25.75	102.125	72.5	8.25	76.625
	1	Ocmulgee, travel to coast										
		715 Staff arrival										
		730 Meet at Geology/Geography parking lot; load truck										
		Brief organizational meeting in room 200 A; introductions and instructions, distribute notebooks, hand lenses, 745 etc	class meeting	0.25			0.25			0.25		
		Cooks + truck depart for Ocmulgee to prepare picnic lunch	class meeting	0.25			0.25			0.25		
		830 Departure from UGA										
		Arrive Sparta granite outcrop; first field activity, go over proper use of field notebooks, rock hammers (3.5 mi										
		1000 SE of Sparta center)	lecture and field activity (instrutor-led)	1.5			0.5					
		1200 Leave Sparta outcrop										
		1300 Arrive Ocmulgee National Monument. Eat lunch.										
		1400 Tour mounds and museum	lecture and tour (instrutor-led)							2.25		
		1630 Departure from Ocmulgee NM										
		take I-16 east to exit 98. Then take GA57 south to Glennville, Ludowici, then Townsend (about 3 hrs).										
		1900 Arrive at campsite, Townsend, GA. Dinner										
		Organizational meeting and instructions for packing truck in AM. Camping gear not needed and should be 2000 loaded first. Provided on Sapelo: bed linens and pillows. Towels NOT provided.										
	2	To Sapelo										
		615 Breakfast (bags to truck at 0615). Pack lunch.										
		730 Leave campsite and head to dock for ferry										
		745 Arrive Sapelo ferry dock (Meridian, GA). Load gear and people onto ferry.										
		830 Ferry departs for Sapelo.										
		900 Arrive on Sapelo and ride to UGA Marine Institute.										
		Unpack, assign rooms (Auditorium building code: 1 4 5) (break room code 8 9 10) laundry code 2122										
		1030 Lecture: Introduction to Earth Systems & Plate Tectonics	lecture	1								
		1130 Lunch break										
		1230 Lecture: Introduction to Ecology (JOHN); assign salt marsh papers	lecture				1					
		ASSIGN PAPERS: Southeast Water and Soil, Salt Marsh Eutrophication										
		1330 Break										
		1345 Lecture: Introduction to Anthropology	lecture							1		
		1445 Break										
		1500 Lecture: Geochemistry & Mineralogy	lecture	3								
		1800 Dinner										
		1930 Distribute ipads, give instructions and assignments	class meeting	0.25			0.25			0.25		
		2030 trip to the beach										
	3	Sapelo										
		700 Breakfast. Pack lunch.										
		800 FIELD EXCURSION: Salt marsh	lecture and field activity (instrutor-led)	0.5			1.5					

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$ \frac{1}{10} $		1930 Lecture: Weathering and Sedimentary Processes	lecture	1.5							
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sum       s		1800 Dinner									
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			videos and class discussion in van	1.25							
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	1130 (CDT) Enter Alabama and Central Daylight Time		1 1	1	1				1	
	1300 (CDT) Gas stop near Montgomery.									
	Travel on US80 business route to cross historic Edmund Pettus bridge.									
	1600 (CDT) Stop, Mississippi Visitors Center									
	1800 arrive camp - LeFleur's Bluff State Park, Jackson MS									
	1830 dinner									
	1930 Lecture: Hominid evolution	lecture						1		
	ASSIGN PAPER: Economic importance of Bats	locaro								
9 All times CDT	Poverty Point, drive to Texas									
g An ames ob t	600 Breakfast (bags to van at 0545)									
	700 Departure									
	roo bepartire									
	800 Mississippi River overlook, lecture (Mississippi River, Gulf of Mexico dead zone, Pleistocene loess deposits)	lecture	0.5			0.5				
	900 Depart									
	To get to Poverty Point from I-20, take the Delhi exit (exit 153) and travel N on LA-17, E on LA-134 and N on									
	LA-577 (follow the signs)									
	1000 Arrive Poverty Point, video, museum, tram tour and atl atl toss.	guided tour						2.25		
	1230 Leave Poverty Point.									
	ASSIGN VIDEO: HHMI Evolution lectures (2 lectures)	videos and class discussion in van	2.25							
	ASSIGN VIDEO: Haynesville	videos and class discussion in van	1.5							
	1830 Arrive in camp - Loyd Park, Grand Prairie TX									
	1900 Dinner									
	2000 LECTURE (ECOLOGY): Nutrient biogeochemical cycles (ECOL 4160 leaders for 15 min max)					1				
10 CDT->MDT	Permian Basin, drive to Guadalupe Mtns									
	615 Breakfast (bags to van at 0600)									
	715 Leave camp									
	ASSIGN VIDEO: Gasland	videos and class discussion in van	1.75							
	Eastland Cty rest area at exit 361 - new and nice rest area									
	915 GOOD GAS STOP ON I-20 at town of CISCO approx at exit 330									
	ASSIGN VIDEO: Your Inner Fish (55 mins)	videos and class discussion in van	1							
	ASSIGN VIDEO: Your Inner Monkey (55 mins) and Ardipithecus	videos and class discussion in van						1		
	1300 Permian Basin Petroleum Museum in Midland TX (group tour)	guided tour	2					0.5		
	1530 Depart for camp									
	1730 (MDT) Enter Mountain Daylight time (NM and far west TX)									
	1745 (MDT) Arrive in camp Pine Springs Campground, Guadalupe Mtns NP									
	1830 (MDT) Dinner									
	1930 (MDT) Lecture: Paleozoic reef communities and Permian Basin paleogeography	lecture	1							
11	Guadalupe Mtns/Carlsbad Caverns (all times MDT)									
	630 Breakfast; pack lunches									
	730 Depart for McKittrick Canyon (entrance gate opens 8AM MDT (not CDT))									
	800 have students sketch reef profile before hiking up slope; hiking safety talk	lecture and field activity (instructor-led)	4.5			4.5				
	hike Permian Reef trail (8.4 mi roundtrip, 2000' elevation gain); geologic markers along trail (look for and	lecture and neid activity (instructor-led)	1.5	1		1.5	1			
	sketch fossils; note ree(f facies changes)									
	students should identify and sketch a marine invertebrate fossils they find on the trail (at least one per phylum	3								
	class)									
	Ask students to sketch an elevation profile of the vegetation from the base to the summit of the mountain.									
	How does this vegetation profile compare to those on the Sapelo beach and salt marsh profiles? Think about abiotic factors that influence the biotic communities.									
	1300 return to vans									
	1330 Guadalupe Mtns Visitor Center	tour		0.25			0.25		0.25	
	1430 return to camp			0.25			0.25		0.20	
	Lecture: Economic importance of bats and conservation/disease ecology, ASSIGN PAPER: Achaeology-									
	1530 ecology	lecture				1				
	1700 dinner									
	1830 Drive to Carlsbad Caverns for bat flight program.									
	1930 Bat flight program	ranger-led program				1				
	2130 return to camp									
12	Carlsbad Caverns, drive to Santa Fe (all times MDT)									
	615 breakfast (bags to truck 600), make lunches									
	715 depart camp									
	730 stateline (evaporites) roadcut	lecture and field activity (instructor-led)	0.75							
	900 Arrive Carlsbad Caverns, lecture on cave carbonate dissolution and deposition (what is source of acid here?)		0.5							
	930 Natural Entrance tour (opens at 8:30; last entrance 3:30 (4pm if using elevator))	tour	0.5	2						
	students should sketch a number of depositional feature in their field notebooks			5						
	1230 leave for Santa Fe									
	ASSIGN VIDEO: Valles Caldera	video and class discussion in van	0.5			0.5				
	1430 gas stop Roswell (Chisum Travel Center on L heading out of town)		0.0			0.0				
	1800 Arrive in camp - Rancheros de Santa Fe (ask for permission to use laundry room after hours)									
	1830 Dinner									
			• •	1				• •	1	

Lecture: U.S. Physiographic provinces; Federal government agencies and public land use; petroleum 1930 production	lecture	1.5				
Day Off in Santa Fe						
Bandelier National Monument and Valles Caldera (All times MDT)						
615 Breakfast						
715 Leave camp						
Arrive Bandelier National Monument (MUST arrive before 9am to drive into park, otherwise must take shuttle)	l <sub>2</sub>					
830 tour ruins, museum (2 mile roundtrip hike)	guest lecture, guided tour					3.25
1200 Leave Bandelier for Valles Caldera						
1245 Valles Caldera overlook; caldera volcanics lecture	lecture	1.25				
1415 Meeting NSF-CZO Field Station managers to discuss current CZO operations.	guest lecture	0.5		0.75		
1530 Valles Caldera visitor center	visitor center		0.25		0.25	
if time: roadstops at South Mtn rhyolite dome, pumice, and obsidian outcrops along NM4 west of caldera						
1600 head to camp						
1800 Dinner						
LECTURE (ECOLOGY) 4160 students assigned to give 5-10 minute overview of 1) Archaeology-ecology and						
1930 ecological succession and legacy of environmental disturbances	lecture			1.5		
NOTE clothing for tomorrow should be appropriate for Acoma visit. No tank tops or short shorts. Respectful						
clothing please. Also, pottery and jewelry will be on sale at Acoma. Many vendors only take CASH.						
Acoma Pueblo, Chaco Pueblo Bonito (All times MDT)						
600 Breakfast (bags to truck 545)						
Leave camp for Acoma Pueblo. Travel South on I-25 to Albuquerque. Then travel West on I-40 for						
approximately 55 minutes. Exit at Exit 102; continue to the roundabout and cross over I-40 following the signs						
to Acomita/Rest Area. At the last roundabout exit at the second right and head to the bottom of the small hill						
with a Stop sign, turn right and follow the signage to Sky City Cultural Center/Haak'u Museum. You will travel through the small village of Acomita for approximately 5 miles then turn left and follow the signs to Sky City						
700 Cultural Center/Haak'u Museum approximate drive is 15 miles from I-40.						
ASSIGN VIDEO: The Mystery of Chaco Canyon	video and class discussion in van					1
arrive Sky City Cultural Center/Haaku Museum for check-in (NOTE: there is NO note-taking allowed in the	video and class discussion in van					I
museum or during the tour. Also, photography only allowed with camera permit - can be obtained with						
900 entrance ticket)						
930 Acoma guided tour begins (board shuttle to begin)	guided tour					2
1200 Museum	museum					
depart for Chaco (I-40W to exit 53, take 371 to Hwy 9 and 57 to Chaco. (Another option - I-40W to Exit 79,						
take Hwy 605 to 509 to Hwy 9 and 57). See map in excursions folder. Route involves 20 miles of dirt road on						
1230 57. CALL CHACO FIRST TO CHECK ON ROAD CONDITIONS 505-786-7014.						
gas stop Grants exit 79						
ASSIGN VIDEO: What Was Chaco	video and class discussion in van					1
1400 Arrive Chaco visitor center	visitor center		0.25		0.25	
1500 tour Pueblo Bonito, Casa Rinconada	guided tour (instructor-led)					2.5
Arrive at camp, Gallo Group Camp (on the right as you enter the park before the visitor's center. Drinking						
water available at the visitor's center parking lot. Water in the camp ground not potable due to mineral						
1730 content.)						
1800 Dinner (also pack lunches tonight to save time tomorrow)						
1930 lecture - Ancient Puebloans, Paleoclimatology	lecture	0.5				1
Chaco Pueblo Alto hike (All times MDT)						
600 Breakfast (bags to truck 545)						
Leave on Pueblo Alto hike (5.4 mile loop) (trails open 7am) - compare sandstone features to Sapelo beach;						
700 also ask students to think about predominant erosional factors here - what causes box canyons?	lecture and field activity (instructor-led)	2	1	1		1
1300 Last hikers return to vans						
depart after final stop at visitors center (follow route to US 550, Nageezi via 7950 and 7900 (13 miles of dirt						
1330 road on the way out)) ass top Artes (Peadrupper Fuels 900 S Main Ave. Artes, NM 97410), comment on Son, Juan Basin all and						
gas stop Aztec (Roadrunner Fuels 800 S Main Ave, Aztec, NM 87410) - comment on San Juan Basin oil and gas	lecture	0.5				
gas arrive Mesa Verde visitor center (outside park entrance); purchase tour tickets for Balcony House (more	1001210	0.5				
1630 adventurous) or Cliff Palace (larger)	visitor center					
arrive Morefield group campground. Check in at store first. Then select group campsite(s) - the first two sites						
1730 on the right work well (sites #16&17).						
1800 dinner						
1930 Lecture - Colorado River hydrology	lecture	1.25				
ASSIGN PAPERS: Drying of the West, Unplugging the Colorado River						
Mesa Verde pit houses and cliff dwellings (All times MDT)						
630 Breakfast, make lunches						
730 Leave camp						
830 Mesa Top Loop - pit houses and Sun Temple	lecture and tour (instructor-led)					2.5
1100 Museum tour	tour		0.5		0.5	2.0
1400 Balcony House tour (must purchase tickets in advance)	ranger-led tour		0.5		0.5	1
1500 Cedar Tree Tower - hike Farming Terrace trail (0.5 mile loop)	instructor led field activity	0.25		0.25		0.5

	Park Point overlook - overview of Four Corners geology (go to right at top lookout for overlook of Mesa Verde		1	1	1 1	1	1	
	1630 canyons, Sleeping Ute, Shiprock)	lecture	1				0.25	
	1730 Return to camp							
	1800 Dinner							
	Evening hike to Point Lookout to watch sunset (2.2 miles roundtrip from campground amphitheater parking							
	1930 lot); No lecture on top. ASSIGN PAPERS: Fossil and Renewable Energy papers.							
18 MDT to MST	Four Corners, Grand Canyon South Rim							
10 110 1 10 1101	630 Breakfast (Bags to truck at 0615)							
	730 Leave camp							
	roo Edulo damp							
	800 Stop at Mancos Shale just outside of park, fossil hunting & ID. (pull off in acceleration lane heading N on 160)	) field activity (instructor led)	1					
	900 depart for Goosenecks							
	1100 Goosenecks State Park (overlook incised meander)	lecture	0.5				0.5	
	1200 head to Arizona via Monument Valley							
	1430 (MST) Grand Canyon Desert View Watchtower	lecture	0.5		0.5			
	(MST) Arrive Ten-X (Kaibab NF) campground, south of Tusayan. Group sites through the gate to right of							
	1630 campground host.							
	1700 Dinner; pack lunches for tomorrow							
	1830 Lecture Grand Canyon geology also cover hiking safety, hydration, hyponutremia. For hike: no sandals, must have at least 2L of water (use	lecture	1					
	one bottle for gatorade), must have a hat and coverage for neck. Pack clean clothes & shower stuff for after							
	hike.							
19 All times MST	Grand Canyon Mapping. (All times MST)							
	430 Breakfast (lunches packed last night)							
	500 Leave camp							
	530 Arrive at Bright Angel Trailhead around sunrise							
	600 Start mapping	field activity (instructor-led)	2.5	2.5				
	1000 Three Mile House (complete mapping here)							
	1100 Start return, those going to Indian Gardens should be there.							
	1200 Those going to Indian Gardens should be back at three mile house. Trip leader ALWAYS! in front.							
	1300 Direct hikers back to Bright Angel Lodge; a van-full can head to showers in Mather Campground							
	1400 Indian Garden hikers should be above mile and a half house							
	1500 All hikers should be out and headed for showers.							
	1600 Most should be on way to camp, last hikers may be at showers.							
	1700 Dinner							
	1830 Instructions for geologic map completion	lecture	1					
20	Day off Flagstaff							
21 All times MST	Grand Canyon Overlooks, Glen Canyon Dam (All times MST)							
21 An unics mor	ASSIGN PAPER: Desert plant adaptations							
	530 Breakfast (bags to truck at 0515)							
	630 depart							
	Grand Canyon overlook stops (Grandview, Lipan); lecture GC environmental issues (air quality, U mines,							
	700 water quality)	lecture			1			
	830 Little Colorado gorge overlook (9.4 miles west on SR 64 from US Highway 89)							
	Lecture - global carbon cycling	lecture	1					
	free time for jewelry/pottery shopping							
	1100 Cameron gas stop ( CameronTrading Post)							
	lecture - Navajo/Hopi	lecture					1	
	1215 leave Cameron for Page via US89							
	1215 leave Cameron for Page via US89 1345 arrive Glen Canyon Dam visitor center (tour scheduled for 1415 MST, must arrive 30 mins early)	visitor center		0.25		0.25		
	5	visitor center		0.25		0.25		
	1345 arrive Glen Canyon Dam visitor center (tour scheduled for 1415 MST, must arrive 30 mins early)	visitor center guided tour	0.75	0.25	0.75	0.25		
	1345 arrive Glen Canyon Dam visitor center (tour scheduled for 1415 MST, must arrive 30 mins early) Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water! 1600 arrive camp Wahweap		0.75	0.25	0.75	0.25		
	1345 arrive Glen Canyon Darn visitor center (tour scheduled for 1415 MST, must arrive 30 mins early) Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water!		0.75	0.25	0.75	0.25		
	1345 arrive Glen Canyon Dam visitor center (tour scheduled for 1415 MST, must arrive 30 mins early) Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water! 1600 arrive camp Wahweap		0.75	0.25	0.75	0.25		
	<ul> <li>1345 arrive Glen Canyon Darn visitor center (tour scheduled for 1415 MST, must arrive 30 mins early)</li> <li>Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water!</li> <li>1600 arrive camp Wahweap</li> <li>1700 Dinner</li> <li>1830 swimming, laundry, complete maps</li> </ul>		0.75	0.25	0.75	0.25		
22 all times MDT	1345 arrive Glen Canyon Dam visitor center (tour scheduled for 1415 MST, must arrive 30 mins early) Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water! 1600 arrive camp Wahweap 1700 Dinner 1830 swimming, laundry, complete maps Grand Staircase, Bryce, drive to Zion (travel in Utah, return to MDT)		0.75	0.25	0.75	0.25		
22 all times MDT	<ul> <li>1345 arrive Glen Canyon Darn visitor center (tour scheduled for 1415 MST, must arrive 30 mins early)</li> <li>Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water!</li> <li>1600 arrive camp Wahweap</li> <li>1700 Dinner</li> <li>1830 swimming, laundry, complete maps</li> <li>Grand Staircase, Bryce, drive to Zion (travel in Utah, return to MDT)</li> <li>600 (500 MST) Breakfast (bags to truck 545); turn in GC maps</li> </ul>		0.75	0.25	0.75	0.25		
22 all times MDT	1345 arrive Glen Canyon Darn visitor center (tour scheduled for 1415 MST, must arrive 30 mins early) Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water! 1600 arrive camp Wahweap 1700 Dinner 1830 swimming, laundry, complete maps Grand Staircase, Bryce, drive to Zion (travel in Utah, return to MDT) 600 (500 MST) Breakfast (bags to truck 545); turn in GC maps 700 (600 MST) depart camp		0.75	0.25	0.75	0.25		
22 all times MDT	1345 arrive Glen Canyon Dam visitor center (tour scheduled for 1415 MST, must arrive 30 mins early) Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water! 1600 arrive camp Wahweap 1700 Dinner 1830 swimming, laundry, complete maps Grand Staircase, Bryce, drive to Zion (travel in Utah, return to MDT) 600 (500 MST) Breakfast (bags to truck 545); turn in GC maps 700 (600 MST) depart camp arrive Grand Staircase entrance at Cottonwood Canyon Road (17.7 miles from AZ/UT border, about 10.5	guided tour		0.25		0.25		
22 all times MDT	1345 arrive Glen Canyon Darn visitor center (tour scheduled for 1415 MST, must arrive 30 mins early) Do not bring bags, food, or anything to drink other than water (camera, clear water bottle, wallet, cell phone ok). Water fountains are not working in the Visitor Center this year, so bring water! 1600 arrive camp Wahweap 1700 Dinner 1830 swimming, laundry, complete maps Grand Staircase, Bryce, drive to Zion (travel in Utah, return to MDT) 600 (500 MST) Breakfast (bags to truck 545); turn in GC maps 700 (600 MST) depart camp		0.75	0.25	0.75	0.25	0.5	

	head N toward Bryce via Cottonwood Canyon Rd through Grand Staircase-Escalante National Monument (es	t	1 1	I	1	1	I I	I	I
	1996 by Clinton & was very contentious; first nat monument run by BLM) 930 hike Cottonwood Narrows slot canyon (3.5 mile loop or leave 1 van at southern trailhead parking area)	field activity (instructor-led)	1			1			
	The southern trailhead is 24.4 miles up Cottonwood Canyon Rd (CCR) from US-89 (northern trailhead is 1 mile further). Set your odometer!! 1200 Cannonville GSENM visitor center (closed Mon and Tues), brief stop								
	1330 arrive Bryce - hike Navajo Trail (1.3 mi loop from Sunset Pt) (note paleosols) 1530 Bryce Canyon visitor center	lecture and field activity (instructor-led) visitor center	1	1 0.25		0.25			
	1600 depart for Zion 1700 Mt Carmel Junction (gas)			0.25		0.25			
	1800 arrive campground (Watchman campground in Zion NP) 1830 dinner (make lunches for tomorrow - pack plenty for long hiking day)								
	1930 LECTURE (ECOLOGY): Fossil and Renewable Energy Resources Instructions for measuring stream discharge		0.5			1			
	divide into stream gauge/hiking teams for tomorrow		0.5						
23	Zion Canyon. (All times MDT) Student teams complete assigned GEOL and ECOI focus questions at various locations in the canyon.								
	Completion of Virgin River discharge measurement by each team required. Sandals not recommend for Narrows hike. Hiking shoes work well. Keep cameras etc in waterproof containers								
	500 Breakfast 530 walk to visitors center for shuttle								
	600 shuttle service starts up canyon	field activity		2.5		2.5			
	1600 last hiker boards shuttle back to camp 1700 Arrive in camp.								
	1800 Dinner 1900 Exam review		0.25		0.	25		0.25	
24 MDT->PDT	Exam 2, drive to Las Vegas (gain 1 hr in Nevada)								
	For power plant tour today: students need to wear power plant appropriate clothes and solid shoes which means no open-toed shoes, no flip flops; no shorts. Short-sleeved shirts are A-OK								
	630 Breakfast (bags to truck at 0615) 730 EXAM 2		1			1		1	
	1045 depart camp (check out time is 11am)					1			
	brief stop LaVerkin Overlook to discuss Hurricane Fault (western boundary of CO Plateau) 1115 head toward St. George and Las Vegas		0.5						
	1130 (PDT) enter Nevada, gas stop in Mesquite								
	1245 (PDT) arrive Harry Allen Generating Station for tour (tour scheduled 1pm PDT with plant manger)	guest lecture and guided tour	1.5		1	1.5			
	Take exit 64, to US-93/Great Basin Highway, Go under freeway to the west; Take an immediate right on a frontage road that parallels I-15 northeast; Turn left at power plant sign; Travel (carefully/slowly because of tortoise protections) northwest for about 2 miles and follow signs to the plant. Security will check you in; all bags must be left on the bus; cell phone photos and cameras are OK.								
	1600 (PDT) check into Las Vegas Hostel (check in starts 3pm) park vans and truck in fenced lot adjacent to hostel. Hostel desk clerk has the key.								
	<ul> <li>1630 (PDT) evening off (pool, dinner out, sight seeing at strip)</li> <li>Nobody walks/explores alone. Split into groups depending on desired restaurant and sight seeing. Downtown</li> </ul>								
	Container Park has good meal options. 2200 (PDT) curfew								
25 All times PDT	Death Valley and Owens Valley (all times PDT) 600 Breakfast (set up in hostel kitchen), (bags to truck at 0545)								
	AUTH Assign Manzanar reading and podcast; Assign TED talk "How language shapes the way we think"								
	(pod will show up as a song in Music)	video and class discussion in van						1	
	815 Gas stop Pahrump, brief lecture on Basin&Range/Great Basin ASSIGN VIDEO: Cadillac Desert I-III	video and class discussion in van	0.5 1			1			
1	1015 Badwater Basin 1130 Visitors center at Furnace Creek	lecture and field activity vistior center	0.5	0.25	(	0.5			0.25
	1230 Leave Visitors center. ASSIGN VIDEO: Cadillac Desert I-III (continued)	video and class discussion in van	1	0.20		1			0.20
	1430 Gas stop Lone Pine, Alabama Hills granite weathering For Alabama Hills stop, head W on Whitney Portal Rd, drive 2.5 miles to Movie Flat Rd and turn right. After 1.5 miles or right at the Y in the road. There will be Natural Arch trailhead parking area immediately on your	lecture and field activity (instructor led)	2						
	left. 1700 Depart for Big Pine								
	From highway 395 in Big Pine, CA, turn west on Crocker Street, proceed 8 miles west - campground will be on your left after you have entered the forested area.								
	1800 Arrive Big Pine Canyon, we have both Clyde Glacier and Palisade group sites 1830 Dinner								
	1930 LECTURE (ECOLOGY): Life history adaptation	lecture			1.	25			

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Locked Mountain for view OfLong Valley, locker, obside an collecting Directions here: by directive Charge Valley, locker, weight you weight yo	630 return to camp								
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Dy of Mannach Lakes         Image: Second Secon	Lookout Mountain for view of Long Valley, lecture, obsidian collecting. Directions here:								
Omstace Point, Tuolome Grove hike         Image: Point	830 https://volcanoes.usgs.gov/volcanoes/long_valley/long_valley_sub_page_18.html	lecture	1						
Omstace Point, Tuolome Grove hike         Image: Point									
030       Brain Artichages bruck at 0615)         021       Lange camp for Vorsemite       0.75         030       Gas dot Lee Vining (Troog Gas Mart on Troog RQ); proceed on Togo RQ into Yosemite       0.75         030       Omsted Point - glacier lecture and geologic history of Sieran Nevada (Mz igneous arc, recent upilft, glaciation) lecture and field activity (instructor-led)       2       2       2       2         030       Omsted Point - glacier lecture and geologic history of Sieran Nevada (Mz igneous arc, recent upilft, glaciation) lecture and field activity (instructor-led)       2	Day on Mammoth Lakes								
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hike up slope on N side of road - observe/sketch textural features of granite and evidence of glaciation Tuolonne Grove hike (1 mi hike to grove, 2+ miles roundrip, 500' elevation toss/gain) - contrast climate and 300 slope confidions here to east side of Sierras, discuss ecology of glant sequelas 300 lece vor file controls here to east side of Sierras, discuss ecology of glant sequelas 300 lece vor file controls here to east side of Sierras, discuss ecology of glant sequelas 300 lece vor file controls here to east side of Sierras, discuss ecology of glant sequelas 300 lece vor file controls where for early hike tomorrow) LECOTURE (ECOLOGY) - California's Water Footprint, Yosemite's Twin, water-energy- 300 food nexus <b>Yosemite Valiey</b> 415 Breakfast 500 Leve camp Glacier Point Overlook - sketch glacial erosional features; discuss granite jointing and exoliation (drivers take Glacier Point Overlook - sketch glacial erosional features; discuss granite jointing and exoliation (drivers take lecture and field activity (instructor-led) 1 the Panorama Trail to Illillouette, Nevada, Vernal Falls (8.3 mi one-way) - observe current predominant (post- side) glacial precisional processes (water hikers wallmeet at trail junctions to keep group together and discuss) field activity (instructor-led) 1 1.5 1 1.5 300 Trive Happy Sies Taithead in valley; take shuttle to Yosemite Village 430 Yosemite Village - vision center and museum; focus on exhibits related to human history in Yosemite depart for camp 700 700 700 700 700 700 700 700 700 70	oou Gas stop Lee Vining (Hoga Gas Mart on Hoga Rd); proceed on Hoga Rd Into Yosemite								
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230 slope conditions here to east side of Sierras; discuss ecology of giant sequolas iecture and field activity (instructor-led) 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Tuolomne Grove hike (1 mi hike to grove, 2+ miles roundtrip, 500' elevation loss/gain) - contrast climate and								
R30 Leave for camp.         00 Arrive in camp. Lone Pines Stanislaus NF.         700 Dimer (pack lunches for early hile tomorrow)         LECTURE (ECOLOGY) - California's Water Crisis: papers, Water Footprint, Yosemile's Twin, water-energy-         900 food nexus         Yosemite Valley         415 Breakfast         500 Leave camp         Glacier Point Overhook - sketch glacial erosional features; discuss granite jointing and exfoliation (drivers take Clacier Point Overhook - sketch glacial erosional features; discuss granite jointing and exfoliation (drivers take Glacial) erosional processes (have hikers wait/meet at trail junctions to keep group together and discuss)       field activity (instructor-led)       1         1       1.5       1       1.5         20 Voenter Village - visitor center and museum; focus on exhibits related to human history in Yosemite       museum and visitor center       0.25       0.25         000       0.00       0.00       0.00       0.25       0.25       0.25					2	2			
100       Arrive in camp. Lone Pines Stanislaus NF.         730       Dimer (pack lunches for early hike tomorrow)         LECTURE (ECOLOGY) - California's Water Crisis: papers, Water Footprint, Yosemite's Twin, water-energy-       1         00       food nexus           Yosemite Valley       15       15       15       16           16       17           17       17       17       17           17       17       17       17       17       17 <td></td> <td> /</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		/							
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LECTURE (ECDLOGY) - California's Water Crisis: papers, Water Footprint, Yosemite's Twin, water-energy- 200 food nexus Yosemite Valley Yosemite Valley 15 Breakfast 200 Leave camp Glacier Point Overlook - sketch glacial erosional features; discuss granite jointing and exfoliation (drivers take 700 vans to Yosemite Village or Happy Isles) hite Panorama Trail to Illiouette, Nevada, Vernal Falls (8.3 mi one-way) - observe current predominant (post- 1300 glacial) erosional processes (have hikers wait/meet at trail junctions to keep group together and discuss) field activity (instructor-led) 11 15 15 15 15 15 15 1									
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hike Panorama Trail to Illiouette, Nevada, Vernal Falls (8.3 mi one-way) - observe current predominant (post- 300 glacial) erosional processes (have hikers wait/meet at trail junctions to keep group together and discuss) field activity (instructor-led) 1 400 arrive Happy Isles trailhead in valley; take shuttle to Yosemite Village 430 Yosemite Village - visitor center and museum; focus on exhibits related to human history in Yosemite museum and visitor center depart for camp 700 330 Dinner			1						
300 glacial) erosional processes (have hikers wait/meet at trail junctions to keep group together and discuss)       field activity (instructor-led)       1       1.5       1       1.5         100 arrive Happy lsies trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttle to Yosemite Village       museum and visitor center       0.25       0.25       0.25         100 arrive Happy loses trailhead in valley; take shuttl									
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130 Yosemite Village - visitor center and museum; focus on exhibits related to human history in Yosemite museum and visitor center 0.25 depart for camp 700 330 Dinner		field activity (instructor-led)	1	1.5	1	1.5			
depart for camp         300         1	400 arrive Happy Isles trailhead in valley; take shuttle to Yosemite Village								
depart for camp         300         1									
700		museum and visitor center		0.25		0.25			
830 Dinner									
930 lecture: Environmental Anthropology lecture 1.5									
	930 lecture: Environmental Anthropology	lecture						1.5	
Western Metamorphic Belt, San Joaquin Valley						1			
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630 Breakfast (bags to truck at 0615)		1 1		1	I I		i <b>i</b>	1 1	1
730 Lecture - west coast tectonics and geology of the gold rush	lecture	1						1	1
830 depart									1
000 Caultanille Marinaa Mathar Lada raadauta (marinaaita aamantina) (kudaat 4kr 5	field estivity (instructor led)							1	1
900 Coulterville-Mariposa Mother Lode roadcuts (mariposite, serpentine) (budget 1hr for stops, 1 hr for drive) 100 head west from Mariposa (get gas, coffee in Mariposa)	field activity (instructor-led)	1						1	1
230 stop fruit stand near Manteca, discuss water issues, subsidence	lecture	0.75			0.5			0.25	1
700 arrive Olema Campground	lecture	0.75			0.5			0.25	1
800 Dinner								1 1	1
930 Lecture - wrap up CA water & prepare for intertidal project					1.5			1 1	1
soo Lecture - wrap up CA water & prepare for intertidal project					1.5			1 1	1
Point Reyes NS- Miwok village, McClure's Beach								1 1	1
630 breakfast								1 1	1
730 depart								1 1	1
830 McClure's Beach - Coastal Processes Exercises (Erosion, Rock Intertidal/Competition, Ocean currents)	lecture and field activity (instructor-led)							1 1	1
Chimney Rock and Lighthouse (The stairs leading down to the Lighthouse, the exhibits in the lower	lecture and neid activity (instructor-led)	0.5			1.5	2		1 1	1
Lighthouse chamber, and the Equipment Building are only open (weather permitting):								1 1	1
300 Fridays through Mondays from 10 am to 4:30 pm)	lecture and field activity (instructor-led)	0.75			0.5			1 1	1
400 South or North Beach (high energy beach)								1 1	1
500 Bear Valley Visitors Center (opens 9AM on weekends and holidays, 10AM weekdays)	visitor center		0.25			0.25		1 1	0.25
600 Earthquake Trail and Miwok Village (Kule Loklo Trail) Hikes	lecture and field activity (instructor-led)	0.5						0.5	1
700 return to camp	icotare and neio activity (Instructor-ied)	0.5						0.5	1
800 dinner								1	
930 lecture - earthquakes, seismicitiy	lecture	1						1	
wrap up intertidal zone exercise		'			0.5			1	1
, ,					0.0			1	1
Muir Woods, San Francisco Bay area geology									1
600 breakfast, make lunch								1 1	1
700 depart								1 1	1
800 Muir Woods (parking reservation is for 8am - parking passes in van folders)	guest lecture, tour				2	1		1 1	1
200 Mussel Rock landslide	lecture and field activity (instructor-led)	4.5						1 1	1
300 Twin Peaks if weather clear OR Marina Green	lecture and held activity (instructor-led)	1.5 0.5						1 1	1
SUC TWILL CARS I WEALTER GEAL ON WAITE GIECH		0.5						1	1
400 Battery Spencer chert outcrop	lecture and field activity (instructor-led)	0.5						1	1
445 Marin Headland Visitor Ctr (Open Daily - 9:30 AM to 4:30 PM)	visitor center					0.25		1	0.5
600 pillow basaslt outcrop near Pt Reyes Station	lecture and field activity (instructor-led)							1	1
700 return Olema campground	icotare and neio activity (Instructor-ied)	1						1	
800 dinner								1	1
930 lecture - seismic building codes; hazard map assignment (due in AM)		1						1	1
Announce dress code for Saturday. Must wear boots and long pants for quarry tour								1	1
Day off San Francisco									I
Oroville, drive to Tulelake								1	1
G30 Breakfast (bags to truck 615); make lunches								1	1
Must wear boots and long pants for quarry tour								1	1
730 leave camp								1	1
ASSIGN VIDEO: Endangered Species Act	video and class discussion in van					0.75		1	1
030 Arrive Oroville						0.75		1	1
Table Mountain Quarry 2216 Table Mountain Blvd Oroville, CA 95966 Phone: 530-534-4517	guided tour	1.25			1.25			1	
300 Depart for camp	-				0			1	
700 Arrive in camp (Hawks Nest, Tulelake, CA)								1	1
800 dinner									1
930 lecture: Cascade volcanics		1.25						1	1
									1
Lava Beds NM 630 Breakfast; Make lunches								1	1
								1	
								1	1
								1	1
730 Leave Camp Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R.								1	
730 Leave Camp Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R. 815 Tule Lake/Klamath Basin Wildlife Refuge - lecture	lecture				1				
730 Leave Camp Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R. 815 Tule Lake/Klamath Basin Wildlife Refuge - lecture Wildliffe Refuge visitor center (The center is open seven days a week, 9:00 am - 4:00 pm, phone: (530) 667-					1			ļ	1
730 Leave Camp Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R. 815 Tule Lake/Klamath Basin Wildlife Refuge - lecture	lecture visitor center				1	0.5			
<ul> <li>T30 Leave Camp</li> <li>Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R.</li> <li>Tule Lake/Klamath Basin Wildlife Refuge - lecture</li> <li>Wildlife Refuge visitor center (The center is open seven days a week, 9:00 am - 4:00 pm, phone: (530) 667-2231)</li> </ul>					1	0.5		1.5	
<ul> <li>Kanger Marken Steine Steine</li></ul>	visitor center	0.75			0.75	0.5		1.5	
<ul> <li>Karangen Karangen Kar</li></ul>	visitor center guided tour	0.75	1.5		0.75			1.5	
<ul> <li>730 Leave Camp</li> <li>Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R.</li> <li>815 Tule Lake/Klamath Basin Wildlife Refuge - lecture Wildlife Refuge visitor center (The center is open seven days a week, 9:00 am - 4:00 pm, phone: (530) 667- 2231)</li> <li>000 Captain Jack's Stronghold (Ranger led tour scheduled for IFP at 10am), 0.5mi inner loop or 1.5mi outer loop 200 Schonchin Butte (0.7 mi hike up) - geologic overview, fire ecology lectures</li> <li>400 Lava Beds visitor center and explore select lava tubes (Cave Loop Road)</li> </ul>	visitor center guided tour lecture	0.75	1.5		1 0.75	0.5		1.5	
<ol> <li>Leave Camp</li> <li>Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R.</li> <li>Tule Lake/Klamath Basin Wildlife Refuge - lecture</li> <li>Wildlife Refuge visitor center (The center is open seven days a week, 9:00 am - 4:00 pm, phone: (530) 667-</li> </ol>	visitor center guided tour lecture	0.75	1.5		0.75			1.5	
<ul> <li>Kangen Camp</li> <li>Head N on CA 139, in Tulelake turn L on Volcanic Legacy Scenic Hwy. At dead end, turn L. Visitor Ctr on R.</li> <li>Tule Lake/Klamath Basin Wildlife Refuge - lecture</li> <li>Wildlife Refuge visitor center (The center is open seven days a week, 9:00 am - 4:00 pm, phone: (530) 667-2231)</li> <li>Captain Jack's Stronghold (Ranger led tour scheduled for IFP at 10am), 0.5mi inner loop or 1.5mi outer loop</li> <li>Schonchin Butte (0.7 mi hike up) - geologic overview, fire ecology lectures</li> <li>Lava Beds visitor center and explore select lava tubes (Cave Loop Road)</li> <li>Return to camp (Hawks Nest, Tulelake, CA)</li> </ul>	visitor center guided tour lecture	0.75	1.5		1 0.75 1.5			1.5	

			ı ı	1		1	1	1 1	1
37	Crater Lake NP								
	630 Breakfast (bags to van at 0615); Make lunches								
	730 Leave Camp								
	830 gas stop - Pilot on 97N just after Klamath Falls								
	1015 Arrive Crater Lake Rim Village - visitor center	visitor center		0.25			0.25		0.25
	Crater Lake lectures - Native American belief&ceremony, Mazama geology	lecture	0.5					1	
	1300 Hike Cleetwood Trail to lake shore (trailhead 4.5 miles east of North Junction)								
	observe/sketch/describe volcanics along trail	field activity		1					
	Lake ecology lecture	lecture				1			
	1500 Be at vans to leave for camp								
	1730 Arrive in camp (Tumalo State Park)								
	1800 Dinner								
	1900 Exam review		0.25			0.25		0.25	
38	Exam 3, Warm Springs Museum								
38	630 Breakfast (bags to van at 0615); Make lunches								
	730 Exam								
	1100 Depart - Head N on Hwy 97 past Redmond and Madras to Warm Springs.		'			'		'	
	The bepart - near non-nwy or past realined and wards to warm opings.								
	Warm Springs Museum (Anthropology) OPEN Tuesday - Saturday 9 am - 5 pm CLOSED Sunday and Mond								
	1200 Pay entrance fees etc on arrival. This is a tribal owned and managed museum. 541-553-3331	guided tour						2	
	1415 Depart - Head N on Hwy 97 past Redmond and Madras to Warm Springs.								
	1645 arrive Battleground Lake SP								
	1700 Early Dinner, pack breakfast and lunch for next day								
	1830 all vans depart for Climber's Bivouac (leave truck in Battle Ground)								
	1945 arrive bivouac								
39	Mount St. Helens hike								
55	500 Wake, dress, eat breakfast								
	530 Begin on Ptarmigan Trail to Monitor Ridge	field activity		4					
	1500 Complete hike	,		-					
	1600 recovery time, return to camp at Battle Ground Lake								
	1800 dinner								
	1930 no lecture tonight								
40	Day Off Portland								
41	Johnston Ridge, Toutle River								
	630 breakfast, make lunch								
	800 depart for Spirit Lake Hwy (Hwy 504, exit 49 from I-5)								
	900 MSH Visitor Center at Silver Lake (WA State Parks facility) \$5/person, open daily 9-5	lecture and visitor center (instructor-led)	2						
	1130 Johnston Ridge Visitor Center (USDA facility) \$8/person	visitor center		2					
	1400 Hummocks Trail (2.3 mi loop)	lecture and field activity (instructor-led)				2.5			
	1730 Return to camp					-			
	1800 Dinner								
	1930 Lecture - ecological succession	lecture				1.25			
42	drive to Olympic Peninsula								
	630 breakfast, make lunch (bags to truck 615)								
	assign geology readings on volcano and EQ hazards of PNW	In structure of the star stars in all field as should be							
	730 soil lecture and exercise in camp 1000 depart	lecture and instructor-led field activity				2.5			
	1200 Mima Mounds	instructor-led field activity	0.75			0.75			
	1400 Squaxin Island Museum	guest lecture and guided tour	0.75			0.75		2	
	1600 depart	gassi issiare ana galaca tour						2	
	Anth: Assign Makah video; Oldham Makah Whaling	video and class discussion in van						0.5	
	1800 arrive camp Kalaloch (Olympic NP)							5.5	
	1830 dinner								
	1930 lecture - tribal sovereignty and cultural preservation	lecture						1.25	
							1		
43	Olympic National Park, Makah Museum								
43	Olympic National Park, Makah Museum 630 breakfast, make lunch								

			-	_						
	head to Ruby Beach, Geology hazards discussion, assign readings/video on Columbia River and basalts,									
	730 Channeled Scablands	lecture and field activity (instructor-led)	1			1				
	1000 depart for Neah Bay									
	1200 Makah Museum	guided tour						2		
	1430 Cape Flattery Trail	field activity		0.5			0.5		0.5	
	1600 depart	,		0.0			0.0		0.0	
	1800 return to camp									
	1830 dinner									
	1930 Geology lecture - large igneous provinces, flood basalts		1.25							
44	Hoh River Rain forest									
	630 breakfast, make lunch (bags to truck 615)									
	Assign Gravlee and Holmes readings (Medical Anthropology; Food & Ag Systems)									
	730 depart									
	830 Hoh River Rain forest (hike and visitor center)	lecture and field activity (instructor-led)				3				
	Hike loops: Hall of Mosses (0.8mi) and Spruce Nature Trail (1.2mi)									
	1200 depart									
	Assign video: Food Chains	video and class discussion in vans						1.5		
	1600 arrive Riverbend Campground (1040 Clubhouse Ln SE, Olympia, WA 98513) - showers and laundry		1							
	1800 dinner									
	1930 ANTHRO LECTURE Social sustainability of Ag & Food Systems	lecture						1.25		
45	Drive to Spokane, Palouse Country		1							
45										
	630 Breakfast (bags to truck at 0615); Make lunches									
	730 Leave camp (I-5N to I-90E)									
	900 Stop at Snoqualmie Pass rest stop (Red Mtn Coffee) EXIT 53 on I-90 East									
	Assign video: "Nova - Mystery of the Megaflood"	video and class discussion in vans	1							
	1045 gas stop in Kittitas, fruit stand (discuss glacial soils & irrigation in eastern WA) EXIT 115, on N side of I-90	lecture				0.5		1		
	1300 Dry Falls State Park or Palouse Falls State Park (Lake Missoula Flood)	lecture and field activity (instructor-led)	1							
	1530 Palouse soil sampling stop	lecture and field activity (instructor-led)	0.5			1.5				
	1730 Arrive in camp (Riverside SP, Bowl and Pitcher Area)									
	1800 Dinner									
	1900 lecture: stream ecology	lecture				1				
		lecture				'				
	2000 complete soil analyses						1			
46	Spokane River water quality project									
	630 breakfast									
	730 lecture: water quality chemistry		0.5			0.5				
	900 tour at Spokane River WWTP	guided tour	1.25			1.25				
	1130 upstream and downstream sampling and testing	field activity (instructor-led)	1.25	1.25		1.25	1.25			
	1630 time to write up results	•••				.==				
	1800 Dinner									
	1930 wrap-up and discuss results		0.75			0.75				
	1000 wiap-up and diodass results		0.75			0.75				
47 PDT ->MDT	drive to Glacier, St. Ignatius		1							
	600 breakfast (bags to truck 545)									
	700 leave camp									
	Assign video: "Nova Origins - Earth is Born"	video and class discussion in van	1							
	Assign video: "Nova Origins - How Life Began"	video and class discussion in van				1				
	ASSIGN PAPER: Climate Change Modeling									
	830 Fourth of July soils stop	field activity (instructor-led)				1.5				
	1000 (MDT) enter Montana and Mtn Time Zone	noia adamy (moradior ida)				1.0				
	1030 (MDT) Gas stop St Regis Travel Ctr (I-90E exit 33) (MDT) Huw 03N Stop in St Ignative (Elethand Indian Reconvertion) Mission and site of former Catholic		1							
	(MDT) Hwy 93N: Stop in St. Ignatius (Flathead Indian Reservation) Mission and site of former Catholic	tour	1							
	1145 boardings school								0.5	
	Anth Lecture: Health disparities & Political ecology	lecture	1					1		
	1330 Three Chiefs Culture Center	guided tour and guest lecture						2		
	1530 (MDT) Depart for camp		1							
	1730 (MDT) arrive camp Glacier Campground, West Glacier									
	1800 (MDT) dinner (and prep lunches for tomorrow)									
			•	•	•			-		

	1930 (MDT) lecture - supercontinent cycle, early Earth		1 1	1	I	I	1	I	1	1	
48 all times MDT	Glacier hike										
	530 breakfast										
	615 leave camp for Logan Pass										
	715 park vans at Logan Pass 745 Start hike on Highline Trail from Logan Pass (relatively flat trail)										
	Field notebook assignment - observe rock types and sedimentary structures along trail	field activity		2							
				2							
	1000 Stop 3.1 miles (before trail climbs to Haystack Pass) for lecture on stromatolities, early earlh atmosphere After lecture, allow students to hike as far as they want. One way distance from Logan Pass: 6.9mi to junctior with Garden Wall Trail, 7.6 mi to Granite Park Chatle (15.2 roundtrip), 7.75 mi to Grannell Giacier Overlook via	lecture	1								
	Garden Wall Trail (15.5 roundtrip)										
	Field notebook assignment for return - observe montane plant/animal adaptations	field activity					2				
	1300 Turn around time 1700 Last hikers back at Logan Pass visitor center, depart for camp										
	1800 dinner										
	1930 Ecology lecture Discuss Adapt West EcoRegion Climate Projections					1.25					
49	Browning, drive to Bozeman										
	615 breakfast (bags to truck 600) 715 Anthropology lecture - mapping key concepts								1		
	815 depart for Browning								1		
	900 Museum of the Plains Indian (9am-4:45pm, Tuesday through Saturday, Closed Sunday and Monday)	guided tour							2		
	1130 Blackfeet Heritage Center (open daily 10-4), meet Ernie HeavyRunner 1300 Depart for Bozeman	guest lecture & tour							1	0.5	
	ASSIGN VIDEO: Climate Change: How do we know we aren't wrong (Podcast)	video and class discussion in vans	0.5			0.5					
	ASSIGN VIDEO: Rachel Carson American Experience	video and class discussion in vans	0.0			2					
	1730 Arrive camp - Hood Creek (on Hyalite Reservoir in Gallatin NF)										
	1800 dinner										
	1930 LECTURE (ECOLOGY): Climate Change (models, assisted migration) ASSIGN PAPER: Yellowstone and wolves	lecture	0.5			1					
50	Day off Bozeman										
51	Yellowstone										
	Yellowstone 615 Breakfast (bags to van at 600); Make lunches 715 leave camp ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How										
	Yellowstone 615 Breakfast (bags to van at 600); Make lunches 715 Ieave camp	videos and class discussion in vans							1.5		
	Yellowstone 615 Breakfast (bags to van at 600); Make lunches 715 Ieave camp ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers		2						1.5		
	Yellowstone 615 Breakfast (bags to van at 600); Make lunches 715 leave camp ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How	videos and class discussion in vans lecture and field activity (instructor-led)	2						1.5		
	Yellowstone 615 Breakfast (bags to van at 600); Make lunches 715 Ieave camp ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers 945 Earthquake Lake/Hebgen Lake 1200 West Yellowstone Entrance	lecture and field activity (instructor-led)	2						1.5		
	Yellowstone 615 Breakfast (bags to van at 600); Make lunches 715 leave camp ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers 945 Earthquake Lake/Hebgen Lake		2			1			1.5		
	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 Ieave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin	lecture and field activity (instructor-led) lecture and field activity (instructor-led)	2			1 05			1.5		
	Yellowstone 615 Breakfast (bags to van at 600); Make lunches 715 Ieave camp ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers 945 Earthquake Lake/Hebgen Lake 1200 West Yellowstone Entrance 1300 Norris Geyser Basin 1500 Mammoth Hot Springs	lecture and field activity (instructor-led)	2 1 1.25			1 1.25			1.5		
	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 Ieave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner	lecture and field activity (instructor-led) lecture and field activity (instructor-led)	2 1 1.25			1 1.25			1.5		
	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground	lecture and field activity (instructor-led) lecture and field activity (instructor-led)	2 1 1.25			1 1.25 1			1.5		
51	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner         1930 LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led)	2 1 1.25			1 1.25 1					
	Yellowstone         615       Breakfast (bags to van at 600); Make lunches         715       Ieave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945       Earthquake Lake/Hebgen Lake         1200       West Yellowstone Entrance         1300       Norris Geyser Basin         1500       Mammoth Hot Springs         1730       arrive camp Mammoth Campground         1800       dinner         1930       LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons       Yellowstone to Tetons	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led)	2 1 1.25			1 1.25 1					
51	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner         1930 LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led)	2 1 1.25			1 1.25 1					
51	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner         1930 LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615 Breakfast (bags to van at 0600); Make lunches	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led)	2 1 1.25	0.5		1 1.25 1	0.5			0.5	
51	Yellowstone         615       Breakfast (bags to van at 600); Make lunches         715       leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945       Earthquake Lake/Hebgen Lake         1200       West Yellowstone Entrance         1300       Norris Geyser Basin         1500       Mammoth Hot Springs         1730       arrive camp Mammoth Campground         1800       diner         1930       LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615       Breakfast (bags to van at 0600); Make lunches         715       leave camp         900       Canyon Village (Visitor Center, Inspiration Point)	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture		0.5		1	0.5			0.5	
51	Yellowstone         615       Breakfast (bags to van at 600); Make lunches         715       Ieave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945       Earthquake Lake/Hebgen Lake         1200       West Yellowstone Entrance         1300       Norris Geyser Basin         1500       Mammoth Hot Springs         1730       arrive camp Mammoth Campground         1800       dinner         1930       LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615       Breakfast (bags to van at 0600); Make lunches         715       larve camp         900       Canyon Village (Visitor Center, Inspiration Point)         1100       Suffur cauldron and mud volcano	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture	2 1 1.25 0.5	0.5		1 1.25 1 0.5	0.5			0.5	
51	Yellowstone         615       Breakfast (bags to van at 600); Make lunches         715       leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945       Earthquake Lake/Hebgen Lake         1200       West Yellowstone Entrance         1300       Norris Geyser Basin         1500       Mammoth Hot Springs         1730       arrive camp Mammoth Campground         1800       diner         1930       LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615       Breakfast (bags to van at 0600); Make lunches         715       leave camp         900       Canyon Village (Visitor Center, Inspiration Point)	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture		0.5		1	0.5			0.5	
51	Yellowstone         615       Breakfast (bags to van at 600); Make lunches         715       Ieave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945       Earthquake Lake/Hebgen Lake         1200       West Yellowstone Entrance         1300       Norris Geyser Basin         1500       Mammoth Hot Springs         1730       arrive camp Mammoth Campground         1800       dinner         1930       LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615       Breakfast (bags to van at 0600); Make lunches         715       larve camp         900       Canyon Village (Visitor Center, Inspiration Point)         1100       Suffur cauldron and mud volcano	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture	0.5	0.5		0.5	0.5			0.5	
51	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner         1930 LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615 Breakfast (bags to van at 0600); Make lunches         715 leave camp         900 Canyon Village (Visitor Center, Inspiration Point)         1100 Sulfur cauldron and mud volcano         1230 Old Faithful	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture visitor center lecture and field activity (instructor-led)		0.5		1	0.5			0.5	
51	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner         1930 LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615 Breakfast (bags to van at 0600); Make lunches         715 leave camp         900 Canyon Village (Visitor Center, Inspiration Point)         1100 Sulfur cauldron and mud volcano         1230 Ordar Prismatic spring         1600 Signal Mountain         16000 Signal Mountain	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture visitor center lecture and field activity (instructor-led)	0.5	0.5		0.5	0.5			0.5	
51	Yellowstone         615       Breakfast (bags to van at 600); Make lunches         715       Ieave camp         ANTH: Assign short Vellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945       Earthquake Lake/Hebgen Lake         1200       West Yellowstone Entrance         1300       Norris Geyser Basin         1500       Mammoth Hot Springs         1730       arrive camp Mammoth Campground         1800       dinner         1930       LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons       Streakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         715       Breakfast (bags to van at 0600); Make lunches         716       Breakfast (bags to van at 0600); Make lunches         71100       Sulfur cauldron and mud volcano	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture visitor center lecture and field activity (instructor-led)	0.5	0.5		0.5	0.5			0.5	
51	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner         1930 LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615 Breakfast (bags to van at 0600); Make lunches         715 leave camp         900 Canyon Village (Visitor Center, Inspiration Point)         1100 Sulfur cauldron and mud volcano         1230 Ordar Prismatic spring         1600 Signal Mountain         16000 Signal Mountain	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture visitor center lecture and field activity (instructor-led)	0.5	0.5		0.5	0.5			0.5	
51	Yellowstone         615 Breakfast (bags to van at 600); Make lunches         715 leave camp         ANTH: Assign short Yellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves an change rivers         945 Earthquake Lake/Hebgen Lake         1200 West Yellowstone Entrance         1300 Norris Geyser Basin         1500 Mammoth Hot Springs         1730 arrive camp Mammoth Campground         1800 dinner         1930 LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615 Breakfast (bags to van at 0600); Make lunches         715 leave camp         900 Canyon Village (Visitor Center, Inspiration Point)         1100 Sulfur cauldron and mud volcano         1230 Old Faithful         1330 Grand Prismatic spring         1600 Signal Mountain         1630 arrive camp (Gros Ventre)         1900 dinner         1900 dinner         1900 dinner         1900 dinner	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture visitor center lecture and field activity (instructor-led)	0.5	0.5		0.5	0.5			0.5	
51	Yellowstone         615       Breakfast (bags to van at 600); Make lunches         715       Ieave camp         ANTH: Assign short Vellowstone reading (Rogers 2016) & videos: Unnatural Histories: Yellowstone and How wolves can change rivers         945       Earthquake Lake/Hebgen Lake         1200       West Yellowstone Entrance         1300       Norris Geyser Basin         1500       Mammoth Hot Springs         1730       arrive camp Mammoth Campground         1800       dinner         1930       LECTURE (ECOLOGY): Yellowstone wolf reintroduction paper discussion         Yellowstone to Tetons         615       Breakfast (bags to van at 0600); Make lunches         715       leave camp         900       Canyon Village (Visitor Center, Inspiration Point)         1100       Sulfur cauldron and mud volcano         1230       Old Faithful         1330       Grand Prismatic spring         1600       Signal Mountain         1830       arrive camp (Gros Ventre)         1900       dinner	lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture and field activity (instructor-led) lecture visitor center lecture and field activity (instructor-led)	0.5	0.5		0.5	0.5			0.5	

	545 hikers leave camp		<b>I</b> 1	1	1 1	1 1	1	1
	615 arrive Jenny Lake, lecture and notebook assignment	lecture	0.25		0.25			
	Jenny Lake shuttle (runs 7am – 7pm, \$15 roundtrip) - take shuttle to Cascade Canyon and hike to Inspiration Point and up Cascade Canyon (optional hike to Lake Solitude) NOTE: If arriving in time for 7AM shuttle and 700 paying CASH the rate is \$\$person. Jenny Lake Boating 307-734-9227 Cascade Canyon hike from shuttle dock: 4 &m ione-way to Cascade Canyon fork; 7.5mi one-way to Lake Solitude. Round-trip to Lake Solitude from shuttle is 15 miles	field activity		2		2		
	1500 last hikers should be in line to board return shuttle boat 1600 rest of day off in Jackson (Drop off and park in lot at N Cache and Gill)							
	1800 purchase dinner in Jackson (Pinky G's Pizza?)							
	2000 return to camp							
54	Tetons to Dinosaur							
54	600 Breakfast (bags to van at 0545); Make lunches							
	700 leave camp							
	730 Gas stop Hoback Junction Assign video: Mass Extinction	video and class discussion in vans						
	Green River overlook stop at Warrenton Bridge campground and picnic area (lecture on wildlife migration and		1					
	900 conservation efforts) Assign video: Planet Earth - Saving Species	lecture video and class discussion in vans	0.25		1		0.25	
	Assign video: Planet Earth - Saving Species 1330 Gas stop Sinclair WY/UT state line	video and class discussion in varis			2			
	1400 drive Sheep Creek Canyon loop (south of Manila, UT), stop at Uinta fault	lecture	1					
	1730 arrive camp 1800 dinner							
	1930 prepare for mapping exercise (review stratigraphy etc)		1.5					
55	geologic mapping project 600 Breakfast, make lunches							
	700 leave camp for map area							
	720 havin manning project (discuss an mtabiatic system den't stan an them)	lecture and field activity (instructor led)						
	730 begin mapping project (discuss cryptobiotic crusts - don't step on them!) 1330 complete mapping	lecture and field activity (instructor-led)	6					
	1400 Visitor center and dino quarry exhibit	visitor center and exhibit		1.5				
	1600 return to camp 1800 dinner							
	1930 instruction for completing maps (due in AM)		0.75					
56	Piceance Basin							
56	Piceance Basin 615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction	lecture	0.5		0.5			
56	615 Breakfast (600 bags to truck); make lunches	lecture	0.5		0.5		1	
56	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality	lecture	0.5		0.5		1	
56	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 1000 depart Dino NM		0.5		0.5		1 0.75	
56	<ul> <li>615 Breakfast (600 bags to truck); make lunches</li> <li>715 Geology &amp; Ecology lecture: the sixth extinction</li> <li>815 Anthropology lecture: social inequality</li> <li>930 brief stop petroglyphs</li> <li>1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss)</li> </ul>	lecture and field activity (instructor-led)			0.5		1 0.75	
56	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 1100 conventional vs unconventional oil/gas) 1300 gas stop Rifle	lecture	0.5		0.5		1 0.75	
56	<ul> <li>615 Breakfast (600 bags to truck); make lunches</li> <li>715 Geology &amp; Ecology lecture: the sixth extinction</li> <li>815 Anthropology lecture: social inequality</li> <li>930 brief stop petroglyphs</li> <li>1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss</li> <li>1100 conventional vs unconventional oil/gas)</li> <li>1300 gas stop Rifle</li> <li>1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.</li> </ul>	lecture and field activity (instructor-led)			0.5		1 0.75	
56	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 1100 conventional vs unconventional oil/gas) 1300 gas stop Rifle	lecture and field activity (instructor-led)			0.5		1 0.75 0.25	
	<ul> <li>615 Breakfast (600 bags to truck); make lunches</li> <li>715 Geology &amp; Ecology lecture: the sixth extinction</li> <li>815 Anthropology lecture: social inequality</li> <li>930 brief stop petroglyphs</li> <li>1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss</li> <li>1100 conventional vs unconventional oil/gas)</li> <li>1300 gas stop Rifle</li> <li>1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.</li> <li>1800 Dinner</li> <li>1900 Exam review</li> </ul>	lecture and field activity (instructor-led)	1.5					
56 57	<ul> <li>615 Breakfast (600 bags to truck); make lunches</li> <li>715 Geology &amp; Ecology lecture: the sixth extinction</li> <li>815 Anthropology lecture: social inequality</li> <li>930 brief stop petroglyphs</li> <li>1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss</li> <li>1100 conventional vs unconventional oil/gas)</li> <li>1300 gas stop Rifle</li> <li>1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.</li> <li>1800 Dinner</li> <li>1900 Exam review</li> <li>Exam 4, day off</li> </ul>	lecture and field activity (instructor-led)	1.5					
	<ul> <li>615 Breakfast (600 bags to truck); make lunches</li> <li>715 Geology &amp; Ecology lecture: the sixth extinction</li> <li>815 Anthropology lecture: social inequality</li> <li>930 brief stop petroglyphs</li> <li>1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss</li> <li>1100 conventional vs unconventional oil/gas)</li> <li>1300 gas stop Rifle</li> <li>1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.</li> <li>1800 Dinner</li> <li>1900 Exam review</li> </ul>	lecture and field activity (instructor-led)	1.5					
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	615       Breakfast (600 bags to truck); make lunches         715       Geology & Ecology lecture: the sixth extinction         815       Anthropology lecture: social inequality         930       brief stop petroglyphs         1000       depart Dino NM         stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss         1100       conventional vs unconventional oil/gas)         1300       gas top Rifle         1730       Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.         1800       Dinner         1900       Exam review         Exam 4, day off         700       Breakfast (645 bags to truck)         800       Exam	lecture and field activity (instructor-led)	1.5					
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57	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 100 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 1100 conventional vs unconventional oil/gas) 1300 gas stop Rifle 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1730 Exam review Exam 4, day off 700 Breakfast (645 bags to truck) 800 Exam 1200 rest of day off in Boulder (or Denver?) Denver Museum 630 take Jenn and John to airport (about 1 hr roundtrip) 730 Breakfast; make lunches	lecture and field activity (instructor-led)	1.5					
57	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 1000 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 100 conventional vs unconventional oil/gas) 1300 gas stop Rifle 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1900 Exam review Exam 4, day off 700 Breakfast (645 bags to truck) 800 Exam 1200 rest of day off in Boulder (or Denver?) Denver Museum 630 take Jenn and John to airport (about 1 hr roundtrip)	lecture and field activity (instructor-led)	1.5	1		1		1
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57	615       Breakfast (600 bags to truck); make lunches         715       Geology & Ecology lecture: the sixth extinction         815       Anthropology lecture: social inequality         930       brief stop petroglyphs         1000       depart Dino NM         stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss         1100       conventional vs unconventional oil/gas)         1300       gas pos Rifle         1730       Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.         1800       Dinner         1900       Exam 4, day off         700       Breakfast (645 bags to truck)         800       Exam         1200       rest of day off         700       Breakfast (645 bags to truck)         800       Exam         1200       rest of day off         701       Breakfast (645 bags to truck)         802       Exam         1200       rest of day off in Boulder (or Denver?)         Denver Museum       Exam 4, ave camp for Denver         801       take Jenn and John to airport (about 1 hr roundtrip)         730       Breakfast; make lunches         801       take ve camp for Denver <t< th=""><th>lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)</th><th>1.5</th><th>1</th><th></th><th>1</th><th></th><th>1</th></t<>	lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)	1.5	1		1		1
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57	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 100 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 110 conventional vs unconventional oil/gas) 130 gas stop Rifle 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1900 Exam review Exam 4, day off 700 Breakfast (645 bags to truck) 800 Exam 1200 rest of day off in Boulder (or Denver?) Denver Museum 630 take Jenn and John to airport (about 1 hr roundtrip) 730 Breakfast; make lunches 830 leave camp for Denver 900 arrive DMNS, paleo lab tour, public exhibits (including Prehistoric Journey) 1430 depart for camp 1800 dinner	lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)	1.5	1		1		1
57 58	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 100 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 100 conventional vs unconventional oil/gas) 1300 gas stop Rifle 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1730 Breakfast (645 bags to truck) 800 Exam 1200 rest of day off 1200 rest of day off in Boulder (or Denver?) Denver Museum 630 take Jenn and John to airport (about 1 hr roundtrip) 130 leave camp for Denver 900 arrive DMNS, paleo lab tour, public exhibits (including Prehistoric Journey) 1430 depart for camp 1500 van and gear cleanup 1800 dinner	lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)	1.5	1		1		1
57 58	615       Breakfast (600 bags to truck); make lunches         715       Geology & Ecology lecture: the sixth extinction         815       Anthropology lecture: social inequality         930       brief stop petroglyphs         100       depart Dino NM         stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss         1100       conventional vs unconventional oil/gas)         1300       gas stop Rifle         1730       Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.         1800       Dinner         1900       Exam 4, day off         700       Breakfast (645 bags to truck)         800       Exam         1200       rest of day off         701       Breakfast, (ak5 bags to truck)         800       Exam         1200       rest of day off         701       Breakfast; make lunches         830       leave camp for Denver         900       arive to DMNS, paleo lab tour, public exhibits (including Prehistoric Journey)         1430       depart for camp         1500       van and gear cleanup         1800       dinner         drive to Columbia, MO (720 mi, 11 hr est, lose 1 hr)         1500 </th <th>lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)</th> <th>1.5</th> <th>1</th> <th></th> <th>1</th> <th></th> <th>1</th>	lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)	1.5	1		1		1
57 58	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 100 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 100 conventional vs unconventional oil/gas) 1300 gas stop Rifle 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1700 Breakfast (645 bags to truck) 800 Exam 1200 rest of day off 1200 rest of day off in Boulder (or Denver?) Denver Museum 1200 Exam and John to airport (about 1 hr roundtrip) 1201 Faakfast, make lunches 1201 eave camp for Denver 1202 ervice Day Spaleo lab tour, public exhibits (including Prehistoric Journey) 1430 depart for camp 1500 van and gear cleanup 1500 dinner 1500 breakfast (bags to van at 515); make lunches 1500 Breakfast (bags to van at 515); make lunches	lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)	1.5	1		1		1
57 58	615 Breakfast (600 bags to truck); make lunches 715 Geology & Ecology lecture: the sixth extinction 815 Anthropology lecture: social inequality 930 brief stop petroglyphs 100 depart Dino NM stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss 100 conventional vs unconventional oil/gas) 1300 gas stop Rifle 1730 Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd. 1800 Dinner 1900 Exam review Exam 4, day off 700 Breakfast (645 bags to truck) 800 Exam 1200 rest of day off in Boulder (or Denver?) Denver Museum 1200 Breakfast; make lunches 1300 Breakfast; make lunches 1300 Breakfast; make lunches 1300 eave camp for Denver 1430 depart for camp 1500 van and gear cleanup 1500 van and gear cleanup 1500 van and gear cleanup 1500 Jereakfast (bags to van at 515); make lunches 1500 Breakfast (bags to van at 515); m	lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)	1.5	1		1		1
57 58	615       Breakfast (600 bags to truck); make lunches         715       Geology & Ecology lecture: the sixth extinction         815       Anthropology lecture: social inequality         930       brief stop petroglyphs         100       depart Dino NM         stop in Piceance Basin to sample/discuss oil shale (Head S on Co Rd 5 at White River City junction) (discuss         1100       conventional vs unconventional oil/gas)         1300       gas stop Rifle         1730       Arrive in Cherry Creek SP camground (Aurora, CO) - use East entrance on Parker Rd.         1800       Dinner         1900       Exam review         Exam 4, day off       700         700       Breakfast (645 bags to truck)         800       Exam         1200       rest of day off in Boulder (or Denver?)         Denver Museum       East entrance         630       take Jenn and John to airport (about 1 hr roundtrip)         730       Breakfast; make lunches         830       leave camp for Denver         900       arrive for camp         1800       dinner         1800       dinner         1800       dinner         1800       dinner         1800       deave camp for Denver	lecture lecture and field activity (instructor-led) lecture and field activity (instructor-led)	1.5	1		1		1

	1900 eat dinner out (China Garden buffet), rest of night off					
60 CDT->EDT	drive home (735 mi, 11 hr est., lose 1 hr) 615 bags to truck 630 leave camp, stop for breakfast (Panera opens 5:30am) rest area on 164 eastbound between exits 23&27. Also nice new Loves at exit 27.					
	stop for lunch break somewhere (Clarksville? Murfreesboro?) 2100 dropoff at Perimeter Mall in Atlanta 2300 arrive UGA campus					