

Course Overview, Requirements & Itinerary

Think globally, learn regionally...

Overview: OEAS500 is an intensive, 7-day field course within Cascadia (i.e., the Cascades, Coast Range & coast of Oregon/Washington) that is offered the week before fall term (13-20 September, First class meeting and orientation 12- Sept).

Rationale: The purpose of the field course is threefold. First, it will provide an introduction to a range of geological, physical, ecological, and biogeochemical topics that exist within Cascadia, the linkages between these topics, and their interaction with society that will be drawn on during the Three--Earth breadth courses that are now required of all OEAS/MRM students. Second, students will collect samples and data (e.g., marsh cores, water samples in Yaquina Bay) that will be used as experiential learning modules in the breadth courses. Third, by living, learning and playing together for a week in the beautiful Pacific Northwest, we hope to build a strong cohort of graduate students that will endure for years to follow.

Requirements: Grading is pass/fail and students will earn 3 credits for taking the course. Besides participating in all facets of the field course (e.g., discussions, dish washing, sampling), students are required to write a brief (3-4 page) paper on some aspect of human – Cascadia system science interaction that will be **due at the end of the fourth week of fall quarter (13 October)**. This exercise will allow the student to delve into a topic of interest in greater detail and identify any writing deficiencies early in their graduate career (i.e., clear writing is a necessary part of being an effective scientist). A field guide will serve as a ‘text’ and resource for getting started on the term paper. In addition, papers and books on Cascadia will be available during and after the field course and there will be some readings in the guide. The intent is for students to read widely! In addition to the term paper, you will be required to keep a detailed ‘lab book’ that will contain your own thoughts and questions about your experiences during the field course. These lab books will also be required by many of your advisors, so it is a good habit to develop. We might ask to see the lab books – so keep that in mind.

Logistics: Transportation will be via OSU vans and ‘housing’ will be tent camping (rain or shine) in the beautiful Pacific Northwest. Students are required to help out with food preparation, cleanup, and general camping chores. A list of suggested items to bring along and more details on logistics is provided in a separate document. **There is a required \$110 course fee that is used for food, supplies and other course-related expenses.** Please have that \$\$ ready at the Sept. 12 orientation meeting.

Instructor: Rick Colwell, 541-737-5220, rcolwell@coas.oregonstate.edu

Co-Instructor: George Waldbusser, 541-737-8964, waldbuss@coas.oregonstate.edu

TA: Sophie Wensman, wensmans@oregonstate.edu

Cascadia 2019 Schedule, Subject to Change

Orientation: Thursday, 9/12, 13:00-16:00, Burt Hall 193

All Location Data are approximate Lat, Lon (decimal degrees °), and Elevation (m)

Day 0 (Fri, 9/13, 11:00 departure): Marys Peak

Meeting at Burt Hall Loading Dock (44.568154, -123.280660, 79)

Stops on Marys Peak :

- Outcrops-
 - pillow basalt quarry (44.482377, -123.535501)
 - Tyee Formation (44.499834, -123.558589)
 - gabbro sill (44.503791, -123.552987, 1,249)
- Mary's Peak Parking Lot (44.510596, -123.550701, 1150)
- Mary's Peak Summit (44.504264, -123.552638, 1250)
- Conner's Camp Trail Head (44.49561, -123.54298, 777)

Guests:

- Abby Metzger (CEOAS Publishing, Willamette Author)
- Kaplan Yalcin (Senior Instructor of Geology, Assistant Dean of Instructional Programs)

General Topics:

- Marys Peak, Oregon Coast Range, Willamette River, commerce, agriculture, logging, Corvallis history, success in grad school

Lodging: On your own; dinner at ~7-7:30 at **Block 15 Tap Room, South Corvallis (bring \$\$)**

Day 1 (Sat, 9/14, 08:00 departure): Western Columbia River gorge

Leaving from Burt Hall Loading Dock (44.568154, -123.280660, 79)

Stops:

- Oregon City/Willamette Falls Overlook (45.351697, -122.626398, 84)
- Crown Point/Vista House (45.539575, -122.244369, 226)
- Latourell Falls (45.538737, -122.218071, 49)
- Bonneville Fish Hatchery (Lunch) (45.633905, -121.956369, 25)
- Bonneville Dam Tour (Bradford Island; fish ladder) (45.641601, -121.943559, 24)
- Ainsworth State Park (R&R; Tent sites C03, C04, C05) (45.641602, -122.050881, 30)

Guests:

- Krystyna Wolniakowski (Columbia River Gorge Commission) at Crown Point

General Topics:

- The Columbia River Gorge, gap winds, climate; large igneous provinces & waterfalls
- Bonneville dam tour, salmon hatchery & resource conflicts in the Columbia River basin

Lodging: Camp at Ainsworth State Park, **camp dinner 1** (Rick's burritos)

Day 2 (Sun, 9/15, 09:00 departure): Eastern Columbia River gorge

Stops:

- Hood River/ Beach (45.714891, -121.518096, 29)
- Rowena Crest Overlook (45.682699, -121.299666, 202)
- Deschutes River (lunch, swim, hike) (45.634581, -120.908414, 58)
- Stonehenge Memorial (45.694363, -120.806069, 182)
- Windy Flats Wind Farm (45.736941, -120.823726, 536)
- Maryhill Museum (optional) (45.677458, -120.864771, 236)
- Overlook of Celilo Falls (Dalles Dam Pool) (45.662976, -120.957342, 190)
- Direct to Hood River or Cascade Locks for dinner (45.665175, -121.895620, 42)

Guests:

- Just us!

General Topics:

- Glacial outburst (Missoula) floods – the story of J Harlan Bretz, climate conditions in gorge, water use agriculture, use of river for transportation and commerce, Hanford
- Swimming in the Deschutes River – bring towel and bathing suits
- The east side, Celilo Falls, wind power, Sam Hill

Lodging: Camp at Ainsworth SP, **dinner at 7 pm Full Sail Brew Pub, Hood River – bring \$**

Day 3 (Mon, 9/16, 08:00 departure): Mount St. Helens National Volcanic Monument

Stops:

- Vancouver Land Bridge (45.620643, -122.667261)
or Sandy River Delta Bird Blind (45.558702, -122.360741)
- Forest Learning Center Overlook (46.308493, -122.396116, 811)
- Johnston Ridge Observatory (lunch) visitor center (optional but recommended)
Due for tour at JRO at 12:00 (46.275328, -122.217299, 1296)
- Hiking along crater/ridge and Hummocks Trail (optional)
Hummocks Trail (46.286388, -122.271766, 778)
Crater-Ridge Trail (46.268705, -122.189026, 1200)

Guests:

- Adam Kent (Associate Dean of Research and Faculty Advancement; Professor of Geology) at Mt. St. Helens

General Topics:

- Subduction zones & explosive volcanism (geohazards)
- The ecology of disturbance, recovery & facilitation
- Volcanism & river sediment fluxes
- Stars (Rick)

Lodging: Camp (inside) at MSH Discovery & Learning Center, **camp dinner 2 (Chef George)**

Day 4 (Tues, 9/17, 07:30 departure): Oregon Coast Range to the Pacific

Stops:

- Astoria (Astoria Column, Pat Corcoran) (46.181322, -123.817416, 182)
- Lunch in Astoria (Shively Park) (46.179452, -123.825505, 85)
- Astoria Maritime Museum (46.189978, -123.823986, 5)
- Lewis and Clark National Historic Park (optional) (46.134507, -123.881647, 14)
- Cannon Beach
- Neahkahnie Mountain Overlook (45.744710, -123.960686, 147)
- Tillamook Cheese Factory (if time allows) (45.484531, -123.844351, 7)
- Cape Lookout State Park (Sites A20, 21, 24) (45.362796, -123.968978, 8)

Guests:

- Robert Allan (CEOAS Director of Graduate Services)
- Pat Corcoran (CEOAS, OSU Extension)

General Topics:

- Cascadia subduction earthquakes and tsunami risk
- Implications of land use (forestry) in the Oregon Coast Range, logging, clear-cuts
- Nutrient inputs from human land-use
- Tom McCall and public beach/access, human interactions with ocean

Lodging: Camp at Cape Lookout State Park, **dinner at 7:30 at Pelican Brewpub, Pacific City – bring \$**

Day 5 (Wed, 9/18, 09:30 departure) Northern Oregon Coast

Stops:

- Netarts Spit (Paige Hovenga and Meredith Leung) (45.362598, -123.9706837, 7)
- Cape Lookout SP (Lunch) (45.362796, -123.968978, 8)
- Whiskey Creek Shellfish Hatchery (Will Fairchild) (45.421415, -123.936247, 5)
- Jacobsen Salt Co. (tentative) (45.379716, -123.954305, 17)
- Possible side trips: Nevor Shellfish Farm, Fish Hatchery/Oyster Reserve
- Free time for a beach or headland hike

Guests:

- Alan Barton (Whiskey Creek Shellfish Hatchery Manager)
- Will Fairchild (CEOAS Graduate Student)
- Paige Hovenga (Civil and Construction Engineering grad student)
- Meredith Leung (G&G graduate student)
- Rob Wheatcroft (OEB professor)

General Topics:

- Subduction zone earthquakes in Cascadia
- Resource utilization in Netarts Bay- recreational clamming, sea salt and oysters
- Ocean acidification & oyster aquaculture
- Marine resource use, marine spatial planning
- Why is sea water salty?
- Sediment transport and beach erosion

Lodging: Camp at Cape Lookout SP, **camp dinner 3** (oyster, mushroom, burger, etc. cookout)

Day 6 (Thur, 9/19, 08:00 departure): Southward along Oregon Coast to Newport

Stops:

- Sand Lake marsh coring (lunch) (45.276102, -123.947275, 7)
- Depoe Bay (whale watching) (44.810035, -124.062329, 18)
- Yaquina Lighthouse/Head (time and interest) (44.676706, -124.079075, 27)
- South Beach State Park (Site 3, group tent) (44.599629, -124.058678, 5)

Guests:

- Rene Boiteau (CEOAS, OEB Professor)
- Rob Wheatcroft (CEOAS, OEB Professor)

General topics:

- Sea-level rise, carbon storage in salt marshes, tsunami deposits
- Sediment stratigraphy
- Free time for beach

Lodging: Camp at South Beach State Park, loop I, **camp dinner 4** (Chef Lori, Chef Joe)

Day 7 (Fri, 9/20, 07:30 departure: Ship Ops and HMSC)

Stops:

- Elakha cruises in Yaquina Bay (8am, 1pm) (44.625598, -124.045030, 1)
- Hatfield Marine Science Center tour (44.621252, -124.043331, 5)

There will be two identical R/V Elakha cruises, one in the morning, one in the afternoon, half the class on each. When not on the cruise students will go on the Hatfield Marine Science Center.

- HMSC Dorm Pavillion, (Lunch between cruises, 11:30ish)
- Burt Hall, Oregon State University (44.568154, -123.280660, 79)

Guests:

- Laurie Juranek (CEOAS Faculty)
- Rene Boiteau (CEOAS, OEB Professor)

General topics:

- Oregon Coast estuaries, living resources, water balance, etc.
- Fisheries, management, threats, and economics
- Wave energy
- Tides

Lodging: YOUR OWN BED!!!

Back to Corvallis by 1900