Estuarine Ecology (WFSC 611)
Course Syllabus, 2012

Instructor:
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This will be a field-based class focused on discovery!
We are going to Oregon to spend a week of discovery along the coast. There is no
preparation necessary for this class, but you are expected to be curious and
passionate! There are multiple locations on the Oregon coast of which I am familiar
(see below). As we visit them, for most of you this will be the first time in such a
habitat, we will let our curiosity guide us as we explore/discover what we find the
most interesting (think of Darwin arriving at the Galapagos). There are many
fascinating aspects about these habitats that span the physical, chemical, geologic,
and biological world. In addition, I think these sites are among the most beautiful
on the planet. We will bring rudimentary equipment, but don’t let the equipment
we bring bias what you find fascinating about the locations we will visit! During
previous classes we’ve had to design experiments with materials purchased at
Walmart.

Readings and Topics of Discussion:
When we return, each of you will select one area of interest that you found the most
interesting. You will then find some recent papers from the primary literature in
this area of interest. As a class, we’ll then read and discuss them.

Grading:
Your grade will be based on your participation, i.e., there will be no tests. I
recommend that you let your curiosity and passion guide you, and don’t worry
about the grade.

Travel, Location and Time of Meetings:
We’ll depart for Oregon (from either the Houston International Airport or the
Austin-Bergstrom International Airport, depending on which airline gives the best
prices) on April 8th. We’ll arrive in Portland then drive to Newport (an ~2.5 hour
drive, so this will be a long day!). While in Oregon we’ll be staying at the Hatfield
Marine Science Center (see attached information). We’ll return to Texas on April
14th. After the week in Oregon, we’ll schedule class meetings (time and place) when
we will discuss each area of interest that you come up with.

Cost to the Student:
Your estimated cost is ~$300. This will cover your lodging and food while in
Oregon. I will pay your airfare and the vehicle rental from a designated account.

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive
civil rights protection for persons with disabilities. Among other things, this legislation requires that all students
with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their
disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of
Student Life, Services for Students with Disabilities in Room 126 of the Koldus Building. The phone number is 845-
1637.
What to Bring:

Gear

The weather of coastal Oregon changes quickly. It would not be uncommon to find yourself in a hail storm with high winds and 1 hour later be basking in sunlight at ~70°F. I’m not kidding. So, dress in layers. I recommend wearing long pants of a light fabric (I’m not a big fan of denim) and a t-shirt. Over this wear a fleece jacket, and have a rain jacket and rain pants to put on when needed (they will serve mostly as a wind-breaker). Wear hiking boots, and have a hat handy. This may not sound like a lot of cloths. However, you will be exerting quite a bit of energy walking around. It is surprising how much heat your body will produce! Also - most of the terrain we’ll be covering is lava rock at various stages of erosion. While beautiful, it will be sharp at some locations.

Your equipment

Have a cell-phone on you. We’ll likely spread out at each of the locations we visit. Shouting to each other does not always work well, especially when the wind is blowing! Bring a digital camera. You’ll find it easier to document phenomena that you find interesting using it. I have a hunch Darwin would have liked one. Bring a field notebook and something to write with that will hold up in foul weather. Don’t forget a pair of binoculars. Bring whatever else equipment you think you might want to use. However, please be sensitive to our space constraints. We will be in a full-sized van while in Oregon – not much room for luggage.

Rudimentary equipment I will bring to be shared:

- Microscope (mirror illuminated)
- Slides, covering slips
- Pipette, and pipette tips
- 20 ml scintillation vials
- Labeling tape, sharpies
- Glutaraldehyde?
- Skirt bottle
- Refractometer
- Thermometers
- Flow meter
- Magnifying glasses
- Stopwatch
- Measuring tapes
- String, Rope
- Duct tape
- Utility knife

* First aid kit
* Field guides
Tentative locations to visit:

Habitat adjacent to the Hatfield Marine Science Center
There is very nice nature trail here through a salt marsh, and extensive mud flats. Also, the beach and jetties are within walking distance. The HMSC Visitor’s Center is here as well, and is excellent.

Yequina Head State Park
There are tidal pools at the base of the cliffs, rookeries atop the sea-stacks, and seals beyond the tidal pools. There is also a higher-elevation viewpoint here, and the park has a visitor’s center.
If we have time, and tides are low enough, there is a location called the Punch Bowl. The geology is very cool there, but it is also easy to get trapped there by the incoming tides!

Mike Miller Park
I’m anticipating we’ll visit this location twice in one day, once in the morning then again in the late afternoon. This area encompasses a bog and a patch of temperate rain forest. The herps and birds here are too cool.

Seal Rock
Like the Yequina Head tidal pools, Seal Rock offers the same features. But the slope of the topography, the degree of exposure, and the wave action are very different. This will offer an excellent site of comparison with Yequina Head.

Yachats
At this location we will explore tidal pool habitat. Again the exposure and wave action will be very different from the previous two locations – again good opportunities for comparisons. My favorite spot on the Oregon coast is here! It is called Devil’s Churn. If we time our visit here well, and the winds have been blowing strong, you will gain a new appreciation for the organisms that can survive here! The highest point on the Oregon coast is also here. Yes – we will check it out.

Old Growth Coastal Forest
We will explore successional stages of coastal forests at this site. We’ll hike several miles this day through newly colonized canopy holes and old-growth forest, and we’ll think about coupling between terrestrial and marine systems!

Other possible activities:

Re-visited sites
Depending on what we want to do, we can revisits sites.

Oregon State Aquarium
This is a really well designed aquarium. For those of you wanting to know about the basic biology and ecology of the Oregon Coast, you’ll get it here.