**MARINE ECOLOGY LAB**

ENV 273LA / EOS 374LA

Fall 2016

**Lab Overview:**

 The purpose of the lab is to expand your familiarity with coastal ecosystems and develop your ability to conduct science from beginning to end, from idea inception to communication of results. Over the course of the lab, we will venture into multiple marine habitats to explore the organisms that live within and even create the habitat. Using the patterns you observe and the hypotheses you develop about why these patterns exist, you will develop and perform an independent research project.

 In order to document and evaluate your intellectual journey in this class, you will be expected to keep a log of your activities and observations as well as answer post-lab questions. The log will serve as a record of what you did, saw, and learned.

**Learning Outcomes:**

1. Be able to look for, identify, and describe patterns in nature
2. Use ecological theories learned in lecture to develop hypotheses to explain observed patterns
3. Develop and conduct an independent research project using experimentation
4. Organize and statistically analyze data

**Lab Notebooks**

 The lab notebook will serve as your permanent log of activities, observations, and hypotheses you develop over the course. Be creative, illustrate your lab notebook with organisms you find particularly interesting, and write down things you’ll want to remember years from now. Don’t fall behind on your logs!

Each week you will receive a handout that will outline the lab objectives as well as follow-up questions. Follow-up questions should be answered in the notebook.

**Field Trips**

 The first half of the lab is comprised mainly of field trips to various marine habitats. Please dress and prepare appropriately for field trips – closed toed shoes (old sneakers, dive boots, shoes that don’t suction off easily), clothes you can get wet and muddy, sunscreen, WATER, etc. If you cannot swim, please inform the instructors.

**Independent Projects**

The latter half of the lab will be devoted towards independent projects. Students will work in pairs, choose a study organism, and develop questions pertaining to your chosen organism that can be tested experimentally. Instructors will advise students on independent projects. Your project will likely require more than the allotted lab time; DO NOT PROCRASTINATE. Students will present their research to the class in a symposium (~13 min presentations + 2 min questions) and write-up their findings in the form of a scientific paper with Abstract, Introduction, Methods, Results, Discussion, and References.

**Grading** (percentage of overall course grade)

Journals – 5%

Independent Project – 15% presentation, 15% paper

**Academic Integrity**

Each student in this course is expected to uphold the Duke University Community Standard.

Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Citizens of this community commit to reflect upon and uphold these principles in all academic and nonacademic endeavors, and to protect and promote a culture of integrity.
To uphold the Duke Community Standard:

* I will not lie, cheat, or steal in my academic endeavors;
* I will conduct myself honorably in all my endeavors; and
* I will act if the Standard is compromised.

**Accommodations for students with disabilities**

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the Student Disability Access Office at (919) 668-1267 as soon as possible to better ensure that such accommodations can be implemented in a timely fashion.

**Lab Schedule**

9/1 Lab Overview, Marine Invertebrates – Pivers Island, NC

9/6 Seagrass Beds – Middle Marsh.

* Meet at boat docks at 13:00

9/15 Sandy Beaches – Atlantic Beach, NC.

* Meet in Lab 1 West

9/22 Oyster Reefs and Shellfish aquaculture – Newport River

* Meeting location TBA

9/29 Salt Marshes – Hoop Pole Creek Clean Water Reserve area, Atlantic Beach, NC

* Meet in Lab 1 West

10/6, 10/13 NO LAB

* Begin thinking about your independent projects!

10/20 Fish and Fish Parasites – Boat trip to Newport River on RV Capricorn

* Meet at boat docks at 13:00.
* Take Bonine/Dramamine if you think you might get seasick!

10/27 Independent Project Selection, Field Methods

* Meet in Lab 1 West from now on

11/3 Independent Projects/Advising

11/10 Independent Projects/Advising, Aquarium

11/17 Data Analysis, Independent Projects/Advising

11/29 Scientific Writing Workshop

12/8 Independent Project Symposium.

* Lab Notebooks Due