

Biol 3664.03 Syllabus Intertidal Ecology and Diversity

Spring, Dalhousie University

Instructor:

Instructor: Prof. Diego Ibarra, Department of Oceanography, LSC 2626; Diego.Ibarra@dal.ca
Demonstrators: to be determined

Classroom:

Lectures will be held in the computer room LSC 2087 unless otherwise noted. Access to the computer lab LSC 2087 requires the presence of the instructor or a demonstrator. This room will not be available after hours unless arrangements are made with the instructor and either the instructor or a demonstrator is present. We will meet there for field trips unless otherwise noted. Any schedule changes will be posted on this door. All field trips leave from the parking area outside the Biology office, between the LSC and Kings.

Meeting Times:

The class starts at 9:05 am and ends at 4:55 pm on Wednesday. We will meet from 9:05 am – 4:55 pm from Monday to Friday unless otherwise noted on the schedule. In many places on the detailed schedule do not include a finishing time. This will depend on the students. The instructor and demonstrators will facilitate the use of wet and computer labs if needed after 4:55 pm. Please note that the field schedule is weather dependent and will likely require modification on a daily basis. Please refrain from making other commitments for the duration of the class.

Prerequisites:

BIOL2003, BIOL2060 and STAT1060 or permission from the instructor.

Purpose and scope:

This class is designed to expose students to ecological concepts while exploring a variety of intertidal habitats in the province (i.e. rocky shore, tidal flats, salt marshes and sandy beaches) and while conducting four projects simulating ‘real-life’ applications of intertidal ecology concepts. In the first and second projects, students play the role of a consulting company hired to write a report involving sample collection and analysis. In the third project, students play the role of a Non-Governmental Organization (NGO) who just got a grant to develop a website for public outreach showcasing the intertidal flora and fauna of Nova Scotia, which will require the students to take photos and videos of flora and fauna in intertidal habitats. In the fourth project, students play the role of academic researcher who was asked to give a short plenary oral presentation in an Intertidal Ecology Conference. At the end of the course, students will have experience using (1) appropriate techniques to sample intertidal organisms, (2) use proper taxonomic literature to identify organisms (3) basic and more advanced statistical techniques (from PRIMER-E and R software) for data analysis and (4) writing techniques for consulting reports and scientific publication.

Field trips:

This class is very field intensive. You are expected to arrive on time prepared for the field trips as scheduled. The bus will not wait for you. **Be prepared for all conditions.**

Student responsibilities:

This class is hands-on, which means must participate fully in all activities, including attending all classes, doing your share carrying equipment/supplies during field trips, and cleaning field gear at the end of each field trip.

(1) **Attendance is mandatory.** You are expected to attend all lectures, labs and field trips. We will deduct any unnecessary absences from your final mark, in proportion to the amount of class time missed. If a problem develops that may keep you from attending a class, contact the instructor.

(2) **Participation.** You are expected to participate and cooperate in all class activities.

(3) **Schedule changes.** You are responsible for finding out about schedule changes and contacting us if you have any questions about the class meeting time, field trips, class material, reports or independent projects. If a field trip is cancelled because of bad weather, an email will be sent to all students early in the morning, also it will be posted on the lab door early in the morning.

(4) **Preparation for field trip.** You are expected to come prepared for field trips. You will need to bring appropriate clothing and footwear for each trip and any personal items needed (see attached lists). Please note alcoholic beverages are NOT permitted on the field trips.

Field trips

#	Description	Location
1	Rocky shore	Peggy's Cove
2	Sandy beach / mudflat	Summerville Centre
3	Mudflat / salt marsh	Wolfville
4	Sandy beach / mudflat	Martinique Beach
5	Mudflat / Acadian sea plants / Tidal power station	Bay of Fundy: Bear river / Cornwallis / Annapolis royal
6	Sandy beach / mudflat	Eastern passage

Evaluation of Student Performance:

Assignment or Presentation	Team or Indiv.	Marks (out of 100)
Consultant report 1 (PRIMER-E)	Individual	20
Consultant report 2 (R)	Individual	20
Conference presentation (part A): Topic & bibliography	Individual	5
Conference presentation (part B): Oral presentation	Individual	20
Website (part A): Diversity photos and identification (oral presentations)	Team	30
Website (part B): Writing species profiles	Individual	5

Grading Scale: The grading scale is the same as used in the Biology core classes:

A+ 90-100	C+ 60-64.9
A 85-89.9	C 56-59.9
A- 80-84.9	C- 53-55.9
B+ 75-79.9	D 50-52.9
B 70-74.9	F <50
B- 65-69.9	

What you should bring on the daytime field trip:

- RUBBER BOOTS!!!
- **raingear (at least a jacket; pants also a good idea)**
- digital camera
- field notebook
- handouts if appropriate
- pencils
- plastic bag to keep things dry
- hiking boots or sneakers (so you don't have to wear your rubber boots or wet shoes all day!)
- warm clothing
- windproof jacket
- lunch, snacks, **water**
- sunscreen
- hat & gloves (if raining, your hands can get very cold!)
- flashlight

Schedule: Intertidal Ecology and Diversity (BIOL.3664) – subject to change

Time	Topic or activity
09:05 - 16:55	<u>Orientation</u> (course objectives, schedule, assignments and medical forms, discussion of assignments and field trips) <u>Lecture:</u> Introduction to the intertidal zone <u>Lecture:</u> Rocky shore ecology <u>Lecture:</u> Sampling techniques
11:00 - 19:30	<u>Lecture:</u> Tides: mechanisms and prediction <u>Field trip:</u> Peggy's Cove Hand-in (23:59): Topic & bibliography
11:00 - 19:30	<u>Wet Lab:</u> Sample processing Diversity-photos student presentations <u>Field trip:</u> Eastern Passage
09:05 - 16:55	<u>Wet Lab:</u> Sample processing Diversity-photos student presentations <u>Computer lab:</u> Primer-E
09:05 - 16:55	<u>Computer lab:</u> R

No class	
No class	Hand-in (23:59): Consultant reports 1 (Primer-E) AND... Consultant reports 2 (R)
09:05 - 18:00	<u>Field trip</u> : Bear river/Cornwallis/Annapolis royal
06:30 - 16:55	<u>Field trip</u> : Summerville Centre <u>Wet Lab</u> : Sample processing Diversity-photos student presentations
09:05 - 16:55	<u>Lecture</u> : Soft-sediment ecology <u>Lecture</u> : Patterns and processes Diversity-photos student presentations
11:00 - 19:30	<u>Lecture</u> : Intertidal flora and fauna <u>Field trip</u> : Wolfville <u>Wet Lab</u> : Sample processing
09:05 - 16:55	Diversity-photos student presentations <u>Field trip</u> : Martinique beach <u>Wet Lab</u> : Sample processing
No class	
No class	Hand-in (23:59): Species profile
09:05 - 16:55	<u>Lecture</u> : Seagrass ecology <u>Lecture</u> : Mangrove ecology and conservation Diversity-photos student presentations
09:05 - 16:55	Plenary student presentations (part A)
09:05 - 16:55	Plenary student presentations (part B) Closing remarks and students feedback End-of-course BBQ