WESTERN UNIVERSITY
Ontario Universities Program in Field Biology

Course Title:	**Experimental Studies in Marine Biology**	
Instructor(s):	Paul Mensink (paul.mensink@uwo.ca)	Contact: Brenda Beretta (bberetta@uwo.ca) Biology, Univ. of Western Ontario, London , ON N6A 5B7; 519-661-2111 x 82555, fax 519-661-3935
Dates:	Saturday 17 August – Sunday 1 September, 2024 (12 full days minimum in the field)	
Location:	Huntsman Marine Sciences Centre, St. Andrew's, New Brunswick	
Cost:	$2400 ($350 deposit at application; $2050 to UWO by mid-July). Includes travel to/from St. Andrew's (by van, all in Canada), accommodations and on-site meals.	
Prerequisites:	completion of two years in a Biology/Zoology program Note: not available to students who have previously participated in Module 14	
Enrolment:	Maximum 15 (4 reserved for UWO students), minimum 7	
Course Description (brief):	This experiential learning adventure will introduce you to the flora and fauna of the Quoddy Region of the Bay of Fundy. We will work mostly in the extensive intertidal zone with its abundant, diverse communities of invertebrates and macroalgae. We will also spend some time observing and discussing marine fish, birds and mammals. You will learn how environmental and biological processes shape the assemblage of organisms that inhabit different marine habitats. You will also develop many useful skills including oceanographic sampling (water quality, dredges, grabs, trawls, plankton tows), surveying, organism identification (using scientific names), note-taking, quantitative ecological sampling, experimental design and fundamental data analysis. We will also observe how human activities affect this very productive ecosystem. Our days are long and intense, but your learning experience will be enhanced by diverse classmates, great facilities and a beautiful setting, first settled by Europeans in 1783. The first week is devoted to observations, identification and quantitative sampling in the intertidal zone and on the HMSC vessel. Students record their individual observations and data for use in assignments. The second week is devoted to research projects based in the laboratory and/or field.	
Evaluation:	(i) ***pre-course*** on-line quiz based on assigned readings (5%) (ii) 3-4 short assignments, completed ***on-site***, based on field observations and data collection (20%), (iii) ***on-site*** laboratory and field exams based on biological knowledge, identification (using scientific names) and collection of organisms studied during the first week (40%), (iv) performance and report (in the style of a journal article) based on the second week's project (35%; due approx. 4 weeks after departing St. Andrew's). When evaluating your performance we will follow UWO criteria, which can be found here: www.westerncalendar.uwo.ca/Archive/2017/2017/pg104.html	

An Average Day – What to Expect

(a) Daily timeline	Our field schedule is dictated by the tides, so we will likely work very early in the morning and late into the evening. Field activities usually last approximately 5 hours, including ~40 min. one-way drives. Before or after field exercises we will work in the lab identifying organisms. Most evenings there will lectures/discussions/presentations lasting ~1.5h. Yes, the days are long. Breakfasts are self-serve and at your own initiative. Lunches and suppers are served in a cafeteria, but when we must in the field during meal times, packed meals will be supplied.
(b) Work habitat & Physical exertion	Daily activities include walking up to 2 km with a backpack, often over wet, uneven, algae covered rocks or thick mud. Some exercises require being aboard a 15m research boat for up to 8 hours at a time. We will work outdoors in all types of weather (except lightning or other dangerous conditions). Most field sites have no services or toilet facilities.
(c) Common activities	Common activities include long drives, walking over uneven and slippery ground, long days exposed to heat/sun or cold/rain, and boat rides that last up to 8h. These can cause boredom (during drives) which can be alleviated with personal music players, books etc. Good hiking boots that are broken-in can mitigate the challenge of uneven ground. It is vital to check the weather forecast, dress appropriately and pack sufficient water to ensure you're ready for any weather. Although sea conditions are rarely very rough, those prone to motion sickness may want to pack dramamine
(d) Weather, dehydration, & biting insects	Weather can vary from hot (30°C) and sunny to cool (<10°C) and rainy, and it is always colder on a boat. Students are expected to check the weather and dress/pack accordingly for the day's activities. Layering is a prudent strategy and students should pack clothes made of fabric that insulates even when we, e.g. polarfleece, wool. It will be mosquito season, and Instructors/TAs can provide DEET-based repellent.
(e) Toxic/poisonous, wildlife/ plants	We will see lots of wildlife, but none are toxic.
(f) Sleeping, washroom & laundry facilities	Students will share dormitory rooms (2/room), segregated by gender, with your own bed, desk and bed linens. Room assignments are made at random. Shared bathrooms are equipped with showers, sinks and flush toilets. The dormitory is not equipped with air-conditioning. Coin-operated laundry facilities are available on-site, but they are limited and can be in high demand.
(g) Meal plans & food allergies	All on-site meals are included in the fees, but while in transit to/from St. Andrew's students must buy/provide their own meals. On-site breakfasts are self-serve (e.g. yogurt, juice, cereal, toast) and at your own initiative. Lunches and suppers are served at prescribed times in the dining hall by the kitchen staff. When in the field during meal times the kitchen staff will provide packed meals (e.g. sandwiches, fruit). With proper notice the kitchen staff is happy to accommodate specific dietary needs (e.g. vegan, allergies, Hallal etc.).
(h) Non-academic responsibilities	Students, along with instructors and TAs, are responsible for monitoring animal health and keeping the lab reasonably clean. We will request student help in packing/unpacking vans, and cleaning the lab before we depart.
(i) Degree of isolation	HMSC is a modern facility with reliable cell phone coverage, water and electricity, but we are expected to conserve resources where possible. The campus has wifi coverage sufficient for course work, but its bandwidth is limited so the use of high-demand streaming (e.g. Netflix) is forbidden. There are no computer workstations available, so laptops are recommended. Unfortunately we will not have access to the counselling services typically available at Universities, but the Instructors are available for discussions. St. Andrews is a small, but well-serviced tourist town with a Scotiabank branch, post office, grocery/drug/hardware store etc. It is a pleasant 20 min. walk to the shops. There is a small clinic in town, and the nearest hospital is a 25 min. drive.
(j) Alcohol & drugs	Alcohol consumption is permitted only in dorm rooms. No alcohol will be consumed prior to (i.e. within 8 hours) or during field work. Anyone deemed unable to fully function as a result of intoxication will not be allowed to participate in field activities; this will be reflected in the student's grade for those activities. Smoking of any legal substance is permitted only in designated areas, but the rules regarding intoxication always apply.

(k) Vaccinations/ Insurances	OHIP (or other Canadian equivalent) is the only required insurance. We will request your health card number and information about any supplemental insurance you may have. All such information will be kept strictly confidential.
(l) Social Situations	Sharing rooms with people you hardly know, and working long hours in close quarters can sometimes raise tensions. Students are encouraged to discuss these with those involved and, if necessary, with the Instructors. We will share the campus (including dormitory and dining hall) with other student groups, some as young as 11, as well as the public. Always treat others with consideration! Remember you are an AMBASSADOR for the course; your University's code of conduct and non-discrimiation/harassment policy is in effect at all times.
(m) Final comments	This course is challenging, but it offers many rewards. You will see organisms you've never seen before in their natural habitats. You will learn useful skills and make new friends. In this small class the Instructors will emphasize the development of professional skills that will aid your future academic and career choices.