

Course Title:	Marine Biology & Oceanography						
Instructor(s):	Dr. Beren Robinson / Dr. Stephen Crawford, Department of Integrative Biology, 519-824-4120, ext. 58968 / 53544; berenrob@uoguelph.ca / scrawfor@uoguelph.ca						
Dates:	Saturday, July 30th – Saturday, August 13 th , 2022						
Location:	Huntsman Marine Science Centre , St. Andrew's, New Brunswick.						
Cost:	\$2,100.00 (350\$ deposit to home university and balance of 1750\$ due as indicated by the instructors) includes all meals, accommodations and transportation at HMSC. Fee does NOT include transportation to or from St. Andrews, N.B.						
Prerequisites:	University Aquatic Biology (or Ecology) Course University Statistics Course University Invertebrate Zoology Course (recommended)						
Enrolment:	20 students (5 for OUPFB; 15 for University of Guelph)						
Description:	A two-week course held at the Huntsman Marine Science Centre, St. Andrews, New Brunswick. Aspects of the biology and ecology of marine organisms will be studied as well as basic oceanographic techniques. The course will include group exercises in the first week to study various intertidal and subtidal ecosystems, and boat cruises to collect and/or observe plankton, benthic invertebrates, fishes, birds and mammals. Students will also undertake a substantial individual research project in the second week addressing the biology of coastal marine organisms. The course provides excellent opportunities for students to familiarize themselves with the major coastal communities and techniques used to study coastal marine biology and oceanography, and to explore links between local Indigenous Peskotomuhkati and Western science knowledge systems about this marine environment.						
Evaluation:	<table> <tr> <td>Group Project</td> <td>40 %</td> </tr> <tr> <td>Individual Project</td> <td>50 %</td> </tr> <tr> <td>Participation</td> <td>10 %</td> </tr> </table>	Group Project	40 %	Individual Project	50 %	Participation	10 %
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An Average Day – What to Expect

Daily timeline	An average work day in the first week (e.g., 7:00 AM breakfast, 8:00 AM field work rain or shine, 12:00 lunch, 1:00 continuing field work, 6:00 dinner, 7:00-10pm class lectures, lab work, individual projects). First week involves group projects that are scheduled according to the tides. Some early departures may occur.
Work habitat & Physical exertion	The fieldwork habitat involves muddy, rocky, and slippery intertidal areas. Boat excursions may involve rough seas. We operate in all weather, and so rain gear, boots and sun hats are essential.
Common activities	<ul style="list-style-type: none"> • common activities (e.g., boat travel over open ocean, walking in slippery habitats and on steep shorelines) • associated risks (e.g., sea sickness, sunburn, animal spines (non-poisonous), sharp rocky edges).
Weather, dehydration, & biting insects	<ul style="list-style-type: none"> • weather conditions likely to be encountered (strong sun, high UV, rain, strong sometimes cold wind).
Toxic/poisonous, wildlife/ plants	<p>Lyme disease ticks occur in area but no encounters yet.</p> <p>Fish and sea urchin spines – gloves worn</p>
Sleeping, washroom & laundry facilities	<p>Dorm rooms are shared with one other student (same sex). Bedding is provided, but towels etc. are not. Floors are generally segregated by gender. Each floor has a shared bathroom / showers.</p> <ul style="list-style-type: none"> • Coin operated washing/laundry facilities are available
Meal plans & food allergies	<p>Any food sensitivities / allergies should be communicated to course personnel as soon as possible. Vegetarian meals may be accommodated by the dining hall staff, though strict vegans are unlikely to be satisfied (in our opinion and experience). Other requests for dining accommodations will be addressed individually, but keep in mind this is a field station not a restaurant.</p>
Non-academic responsibilities	Respectful interactions with local members of the Peskotomuhkati nation.
Degree of isolation	The town of Saint Andrews is a 15-20-minute walk from the station. It has grocery, pharmacy, post office, souvenirs, hardware, and restaurants. A small health centre is in town, the closest hospital is the Charlotte County Hospital in Saint Stephen NB.
Alcohol & drugs	Alcohol is permitted in dorm rooms only
Vaccinations/ Insurances	Fully vaccinated for covid-19
Social Situations	<p>Shared dorm rooms, labs, vehicle trips.</p> <p>Interactions with local members of the indigenous Peskotomuhkati Nation.</p>
Final comments	Opportunity to learn techniques in marine biology and oceanography, develop independent research skills, social interactions with Canadian and Indigenous peoples. This course is intended for 3rd or 4th year students specializing in Aquatic or Marine Biology.