

UNIVERSITY OF WESTERN
Ontario Universities Program in Field Biology

Course Title	Tropical Marine Environments
Instructor(s)	Dr. Graeme M. Taylor (gtaylor8@uwo.ca) Admin. Brenda Beretta(bberetta@uwo.ca)
Dates:	Friday April 26 to Sunday May 8 th , 2023
Location:	Belize Marine Studies Field Camp at Lighthouse Reef Atoll, Belize
Cost:	Approximately \$2900.00 plus a \$350 deposit to home University. The non-refundable \$350 deposit is due to your home university upon registration. Instructions for providing the balance (\$2900), due by Monday March 6th, will be provided after registration. Covering transportation within Belize, park fees (e.g. Blue Hole), room/board at field/base camp and 3 Belizean guides. Fee does not cover: flight to & from Belize, personal travel, travel medical insurance, food on mainland (two days), snorkel gear and personal equipment, such as field clothing and waterproof watch (price varies & you will need to do your own estimate). Cancellation and refund policy: Enrolment is confirmed when full payment is received by Friday March 8th. Payment has to be made by this date as we need to secure our position at the base camp on Halfmoon Cay (Belize). After March 8th anyone in arrears will be automatically removed from the course roster. Cancellations must be received, in writing, by the 15th of March. After March 15th we retain your full payment, as the monies are used at this time to reserve the base camp at Halfmoon Cay and hire the camp crew. No exceptions are provided for these procedures. Should UWO need to cancel the course for any reason, you will receive a full refund. The student is responsible for all fees incurred & by the home or host university due to any bounced cheque.
Prerequisites:	Students must be in the Biology Honors program (or Environmental Sciences), with & 1 ecology & 1 statistical course completed. As a minimum, you must have the ability to continuously swim 600 m. This is for your safety, as we will swim this distance in open seas. Medical travel insurance, trip cancellation insurance, a current tetanus inoculation and a valid passport are mandatory. Students with non-Canadian passports must determine visa requirements for Belize.
Enrolment*:	20 students (8 reserved for Western)
Course Description (brief):	This course is an introduction to tropical marine environments. We will immerse ourselves in the diversity of habitats at Belize's most spectacular atoll — Lighthouse Reef. We will be based on a remote 40-acre tropical island, 90 km offshore of the Belize mainland, within the Half Moon Cay Marine Reserve. The atoll is surrounded by a fringing reef rising virtually to the surface. Inside this reef is a lagoon speckled with hundreds of coral patches. The reef is highlighted for its density and diversity of both corals and fish. We will literally be surrounded by marine life. Much of our time will be spent exploring by kayak and snorkeling. We will learn to be field biologists, to document and to interpret what we observe, and to develop scientific questions from our observations. From your observations, you and a partner will develop a research project. Our endeavors will be facilitated by Island Expeditions who have over 20 years of experience operating field camps in Belize. (www.islandexpeditions.com)
Evaluation:	First Quiz 15% given on arrival in Belize or day following, Field Journal 20% (due in Belize) Science blog (x2) based on your field journal 20% (due June 16), Participation, Leadership and Professionalism 10% (starts on signing up for the course), Research project & paper 35% (Due June 16)

An Average Day – What to Expect

(a) Daily timeline	We start our day at 6 am with the rise of the sun and before our breakfast is served at 8 am. The morning activity involves either a hike to the bird colony or similar shoreline activity. Some days will include going out on the water (kayak or motorboat) before breakfast but usually does not involve snorkelling. Our cooks provide breakfast at 8 am, we eat and help with clean up. During breakfast and lunch, we are having informal lectures covering biological topics and logistics. There are two snorkels/dives (referred to as dives but we do not use SCUBA, only mask and fins) in an average day, one after breakfast and one after lunch (12 pm), and sometimes after dinner. Logbook activities take place after each dive and after dinner, at about 6 pm. Lectures and guest speaker (e.g. Belize Audubon Society, and MarAlliance) will take place after dinner and clean up, but most students work on their journals to 9 pm. We get to bed shortly after 9 pm, as these work days are both physically and mentally exhausting.
(b) Work habitat & Physical exertion	For each snorkel/dive we spend about 1.5 to 2 hours in the water, thus being able to swim and being in good shape is essential. Furthermore, seas can be turbulent with large waves, swells and currents, making dives more physically demanding. Several times throughout the field course we will also go on a night dive and hikes. Waters are usually calm, but visibility is limited to the area of your dive light (equipment provided), and this can be stressful for some students.
(c) Common activities	<ul style="list-style-type: none"> • common activities (e.g., boat travel over open ocean, kayaking over the atoll, night snorkelling from shore) • associated risks (e.g., seasickness, capsizes, getting lost, fatigue, blisters from sandals and fins, heat exhaustion, sunburns, cuts from rock-coral in the sand, and jellyfish (and other animals) stings). We do our best to minimize the risks involved.
(d) Weather, dehydration, & biting insects	<ul style="list-style-type: none"> • Weather conditions likely to be encountered are typically tropical, and these can involve the following: 21 to 40 degrees, intense sun, high UV, high humidity, heavy rain, high winds, and lightning storms. Students need to be aware of avoiding dehydration, sunburns, heat shock, hypothermia. • Insects, though not abundant on the island, are present and these are mosquitoes, no-see-ums and scorpions. We will be sleeping in tents, and these arthropods can gain access. Detailed dress codes will be provided but in short, cover up and have insecticide sprays available.
(e) Toxic/poisonous, wildlife/ plants	<p>Natural hazards in the work/living environment are potentially not limited to those mentioned here, but include the possibility of: jaguars, mosquitoes & malaria, stinging bees/wasps/fire ants, poisonous snakes, centipedes, sharks, scorpionfish, lionfish, fire coral, fire sponge & jellyfish. Risks are common, but with good sense and planning, they are minimised.</p> <p>Only a medical doctor can provide a risk assessment of pathogens for those travelling abroad. I encourage all students to visit a medical travel clinic for a full assessment and the latest pathogenic risks for any given country.</p>
(f) Sleeping, washroom & laundry facilities	<ul style="list-style-type: none"> • Sleeping accommodations are shared tents, and each tent has between two and three students per tent. Males and females do not share tents. Sleeping gear is provided (e.g., tents, sheets, pillows, no-see-um screens). If you are extra sensitive to bug-bits and scorpions, bring a sleep bug-net. • Washroom facilities are communal, outhouse non-flush toilets; toilet paper is provided. • We have cold showers, and no laundry facilities.
(g) Meal plans & food allergies	All meals are provided, and cooks do the needed preparation. Cooks do their best to accommodate student-specific meal plans and allergies, however, risks to an individual having an allergic reaction are highly amplified as we are potentially 8 hours away from a hospital .
(h) Non-academic responsibilities	Students are encouraged to help our guides/staff with non-academic responsibilities like general camp, cooking/cleaning/sweeping, organizing books and equipment, and washroom cleaning.
(i) Degree of isolation	<p>We are very isolated from any service you might take for granted as an urban dweller.</p> <ul style="list-style-type: none"> • We have limited hydro for recharging cameras and laptops. To do so, a generator runs for a few hours a day. • We have no communication (no internet, no phone) with the “plugged-in world.” • There are no stores to access for personal hygiene needs, missing/forgotten equipment • Bring your medical supplies. We do provide back-up in an emergency.
(j) Alcohol & drugs	No alcohol or recreational marijuana permitted
(k) Vaccinations/ Insurances	Students must have travel insurance and consult with a medical doctor as to their needed vaccinations.
(l) Social Situations	Students need to have an open mind, and be respectful of others, as we are living in close quarters, and we share the campsite with our Belizean hosts. Students are expected to act professionally, be respectful of the local culture, and to view this opportunity as a working academic endeavour 24/7.

(m) Final comments	Few students, if any, have regrets, and find their time in Belize and on this course a life-changing experience. If desired, and still find yourself 'sitting on the fence' speak with past students by joining our Facebook group.
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