

BIOS 319: Tropical Field Biology
Summer Block B1: May 9 – June 24, 2022

Instructors:

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Course Overview:

This course consists of a 2-week (June 8-22) trip to Belize to examine first-hand the biology of the two most diverse ecosystems on earth: the coral reef and the tropical rainforest. Days will be spent in the field making observations and collecting data; lectures in the evenings will cover topics including diversity of tropical organisms and habitats, rainforest ecology, coral reef biology, cave biology, symbiosis, and conservation of tropical biodiversity. Selection of students for the course is determined through an application and interview with the instructors. While a background in biology is desirable (minimally including BIOS 202 and BIOS 213), individuals lacking this background but having a special interest in the tropics are encouraged to enroll.

Learning Objectives:

By the end of this course, students will be expected to be...

- able to recognize common species that live in the rainforest and on the reef.
- familiar with some of the methods used to conduct research in the tropics.
- able to keep a well-organized and accurate field notebook.
- able to live and work productively in basic conditions in remote locations.
- able to communicate effectively using a blog.

Location:

The class will travel together from Houston to Belize. The first part of the course will take place at Glover's Reef Research Station on Southwest Caye, a small island in Glover's Atoll, a UNESCO World Heritage Site (<http://wcsgloversreef.org>). The second part of the course will be spent at Las Cuevas Research Station (<http://www.lascuevas.org>), a remote rainforest camp located in Chiquibul National Forest. Accommodations at both field stations are rustic, with dorm-style rooms, shared bathrooms and no air-conditioning or hot water. An additional night will be spent at the Belize Zoo's Tropical Education Center (<https://www.belizezoo.org/accommodation/accommodations.html>), an eco-lodge located in a tropical savanna. Transportation between sites will be by private van and boat.

Tuition and Course Fee:

Rice University tuition for this course is \$2,000. An additional course fee of \$2,500** covers the costs of all student transportation costs, including international airfare, local transportation, accommodations, meals, site fees, licensed marine guides, and taxes. The course fee is due on February 15, 2022 and is non-refundable (the fee is used to cover the cost of students' transportation and accommodations, which must be purchased ahead of time to ensure availability). *Other expenses not included in the trip cost include personal gear (see below), vaccinations, medications, and any other personal expenses.*

*****Any student who is unable to pay the tuition or course fee may be able to apply for a need-based scholarship. Please ask the instructors for more information.***

Course Schedule (subject to change):

Date	Activity	Accommodations
8-June	Travel from Houston to Belize	Glovers Reef Research Station
9-June	Reef Day 1	Glovers Reef Research Station
10-June	Reef Day 2	Glovers Reef Research Station
11-June	Reef Day 3	Glovers Reef Research Station
12-June	Reef Day 4	Glovers Reef Research Station
13-June	Reef Day 5	Glovers Reef Research Station
14-June	Reef Day 6	Glovers Reef Research Station
15-June	Travel to Las Cuevas/Rainforest Day 1	Las Cuevas Research Station
16-June	Rainforest Day 2	Las Cuevas Research Station
17-June	Rainforest Day 3	Las Cuevas Research Station
18-June	Rainforest Day 4	Las Cuevas Research Station
19-June	Rainforest Day 5	Las Cuevas Research Station
20-June	Rainforest Day 6	Las Cuevas Research Station
21-June	ATM Cave/Travel to Tropical Education Center	Tropical Education Center
22-June	Travel to Houston	

General Requirements:

Students are expected to participate in all activities, including pre-departure meetings, field exercises and lectures, and to follow instructions given by the course instructors. Students will (1) research a topic and two taxonomic groups prior to departure, which will form the basis for presentations to the group during the course; (2) create a field journal that documents daily activities, observations, and species seen; and (3) use excerpts from the field journal to write blog entries that relate activities and sightings to the themes discussed during the course and will include notes and photos of observations of members of their taxonomic groups.

Required Reading:

Bridgewater, S. (2012) *A Natural History of Belize: Inside the Maya Forest*. University of Texas Press.

Levinton, J.S. (2009) *Marine Biology*. Oxford University Press, pp. 432-455 (PDF available on Owl-Space)

Recommended Reading:

Kricher, John (1999) *A Neotropical Companion: An Introduction to the Animals, Plants, and Ecosystems of the New World Tropics* (2nd ed.), Princeton University Press.

Sheppard, C.R.C., Davy, S.K., Pilling, G.M. (2009) *The Biology of Coral Reefs*. Oxford University Press

Required Materials:

Valid passport, swimsuit, mask, snorkel, fins, Neoprene dive booties, full body lycra dive skin, long pants (synthetic material is better than cotton; jeans are NOT recommended), knee-high rubber boots, two 1-L water bottles (Nalgene® or similar), waterproof notebook (Rite in the Rain® or similar), digital watch with alarm, raingear (poncho or raincoat), sunscreen.

Recommended Materials:

Laptop, mosquito repellant, waterproof binoculars, long sleeve cotton shirts, hiking socks (synthetic or wool), hat, polarized sunglasses, jacket or fleece, sandals/flip-flops, comfortable shoes for walking in town (e.g. tennis shoes), electrolyte drink packets (Gatorade® or similar). *A waterproof digital camera, dive light, caving helmet, and headlamp will be provided for each student.*

Grading:

Grades will be calculated out of a total of 200 points. The point breakdown by assignment is shown below and rubrics for each assignment are available on Owl-Space. Final course grades are determined using a straight scale, with the following cutoffs (98-100% = A+; 93-97 = A; 90-92 = A-; 88-89 = B+; 83-87 = B; 80-82 = B-; 78-79 = C+; 73-77 = C; 70-72 = C-; 68-69 = D+; 63-67 = D; 60-62 = D-; < 60% = F).

Assignment	Points per assignment	Number of assignments	Subtotal
Canvas quizzes on required readings	5	6	30
Taxon identification sheets	12	2	24
Blogs – pre-departure	2	1	2
Blogs – daily	3	15	45
Blogs – wrap-up	5	1	5
Presentations – taxon briefing	6	2	12
Presentations – topic lecture	12	1	12
Field notebooks	30	1	30
Participation	40	1	40
Total			200

Note:

Any student with a documented disability needing academic adjustments or accommodations must contact Disability Support Services (<http://dss.rice.edu/>) located in the Allen Center, Room 111 and is requested to speak with one of the instructors prior to the beginning of the course. All discussions will remain confidential.

Honor Code:

Students are expected to work collaboratively on field activities, but quizzes and all assignments completed prior to the trip should be completed individually. Any sources used to in presentations, reports, blogs, or other class assignments, including materials provided as part of the class (i.e. readings posted on the course website), must be properly cited. For more information visit <http://honor.rice.edu/>.

Harassment and Discrimination:

Rice University cares about your wellbeing and safety. Any student who has experienced an incident of harassment, pregnancy discrimination or gender discrimination or relationship, sexual, or other forms interpersonal violence is encouraged to seek support from [The SAFE Office](#). At Rice University, unlawful discrimination in any form, including sexual misconduct, is prohibited under Rice Policy on Harassment and Sexual Harassment (Policy 830) and the Student Code of Conduct. As the instructor and a responsible employee, Dr. Solomon is required by Title IX to disclose all incidents of non-consensual interpersonal behaviors to the Title IX Coordinator on campus. Although responsible employees are required to make this notification, it is the student's choice to pursue a formal complaint. The goal is to make sure that students are aware of the range of options available and have access to the resources when in need. For more information, please visit safe.rice.edu, titleixrice.edu, or email titleixsupport@rice.edu.