

Z004403C - Marine Biology in the Galapagos Islands

Summer 2025 | Dr. Melissa Meadows & Ashley Kusel (TA)



Course Goals

Course Description

We will explore physical oceanography, marine organisms and adaptations, and marine ecology with emphasis placed on Galapagos organisms and coastal, intertidal, and subtidal environments. Human impacts on marine ecosystems will be discussed, especially marine ecosystem issues and conservation in Galapagos. We'll spend 2 weeks preparing for the field portion of the trip with activities, lectures, and the development of research proposals. During the trip, we will spend ample time observing marine organisms both from land (especially sea lions, marine iguanas, and sea birds) and while snorkeling. You will design and carry out your own short research project in partnership with field station scientists and park naturalists and present it, too!

Learning Objectives

Upon completion of this course, you will be able to:

1. Demonstrate understanding of fundamental principles of marine biology including physical oceanic processes, biodiversity, and ecosystems with special focus on the Galapagos Islands.
2. Describe major groups of marine organisms and identify Galapagos marine species.
3. Integrate knowledge of marine ecology to analyze human impacts on marine environments.
4. Apply knowledge to conduct original marine research.

Class Meetings

May 12 – 23 (pre-trip), MWF 9:30 – 12:15, 2 - 4:45, Bartram 211 or on Zoom by arrangement, attendance required

May 26 – June 20 (Galapagos Islands, Ecuador), according to schedule

Instructor Information and Contact

Instructor Bio

Dr. Melissa Meadows teaches Marine Biology, Invertebrate Biodiversity, Marine Ecology, and several other biology courses at UF. Her research has taken her around the world working on rainforest birds, hummingbirds, fish in the Red Sea, and more! Dr. Meadows loves being in the field with students; here she is with a diamondback terrapin! :) Want to know more? Check out my intro video:

<https://tinyurl.com/y6q3jzuu>



Instructor Contact

Dr. Melissa Meadows (she/her)

Department of Biology

- Email: melissa.meadows@ufl.edu
- Cell phone: (352) 222-1539 (please only use for communication for this course and do not share!)
- Zoom Office: <https://ufl.zoom.us/j/3066712046>
- In-person Office: Carr 522B

Ashley Kusel (TA) (She/her)

Department of Biology

- Email: ashleymeade@ufl.edu
- Cell phone: (772) 708-6587

Communication

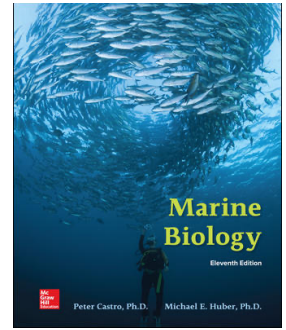
Because this is a study abroad program, you'll have ample opportunity to chat with instructors before and after class meetings. Contact us via email, especially before the course, for anything needed before the trip that is not time sensitive. We also have our class GroupMe that can be used for quick communication. Our cell phone numbers should only be used for individual communication that is time sensitive, especially during the trip in Ecuador. Please do not use our cell numbers for communication about matters outside the course (letters of recommendation, etc.) or share them with other students outside this class. You may share our numbers with family members for emergency contact during the trip ONLY.

[Please set your notification preferences in Canvas](#) (under Account) so that you receive timely notifications of course announcements and messages, and plan to check your UFL-email regularly. Not having read the information in the syllabus, on Canvas, in course announcements, or in your email will NOT constitute an excuse for missing deadlines, assignments, or other assessments.

Recommended Materials

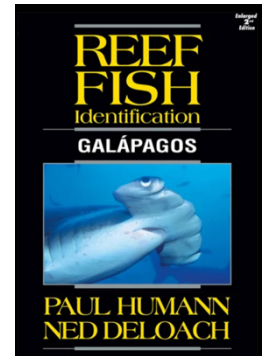
Marine Biology (12th Ed.), Castro & Huber, 2024, McGraw-Hill

- No required assignments (Connect is not needed), but background reading will help with understanding of concepts.
- An older edition is also fine and differences will be small.
- Ebook or print is fine, but the print book will be heavy if you would like to have it in Galapagos. There's a Kindle edition on Amazon which you can have downloaded on a device (free app works on phones/ tablets!) so you don't need internet access.



Reef Fish Identification – Galapagos (2nd Ed.), Human & DeLoach, 2011

- We'll be doing a lot of snorkeling and activities involving fish identification and it is fun to be able to check off the species you see! Everyone will need to learn their fish species for our REEF fish surveys!
- The print version is not too heavy, and we'll likely have a copy (depends on my suitcase weight), though you may like to have your own.
- PDF downloadable ebook is available at <https://fishid.com/store/product/reef-fish-identification-galapagos-pdf-ebook/>



Assessments and Grading

Participation and Discussions

Active participation, and thus attendance, is required for all course activities and meetings in Gainesville and in the field. A community-centered and hardworking attitude will be vital to receiving full points for participation.

Field Research Project

In groups, you will develop a short-term, observation-based marine organismal field research proposal and give a presentation on it prior to our trip. During part of the trip, you will carry out a research project (it doesn't have to be what you initially proposed!) based on initial observations and interests you develop in the field in addition to those you gravitate towards before the trip. You will conduct background research and develop a plan for data collection, meet with the rest of the class to discuss and further develop your ideas, collect and analyze your data during two dedicated field days, and give a final presentation including your results.

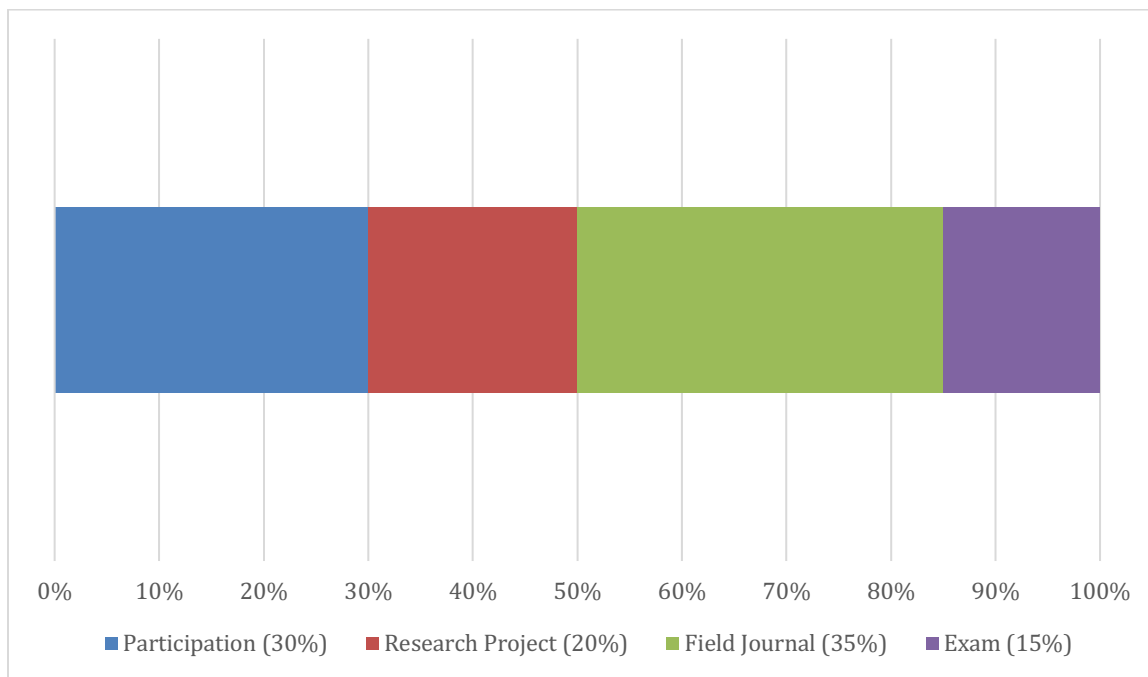
Field Journal

As much a keepsake as an assignment. Here, you'll record your observations each day in the field, including descriptions and drawings of habitats we visit and the organisms that live there; research project ideas, data, and results; and other small assignments in the field. Marine activities, habitats, and organisms will count toward your field journal grade for this course and terrestrial ones will count toward your grade for Galapagos Ecology & Evolution.

Exam

There will be a final exam at the end of the course to include lecture and reading content, organism identification, ecological observations, and other info acquired during our trips.

Final Grade Weighting by Assessment Category



Participation 30%, Research Project 20%, Field Journal 35%, Exam 15%

Attendance and Make-ups

Attendance of all class sessions as well as activities and meetings while in the field are required. There are some reasons you might miss class that are excused. Let me know ASAP that you'll be absent and why and provide documentation. Please note that due to the compressed 6-week schedule of the course as well as its reliance on

field work during trips, it will be very difficult to make up work missed. Please do not plan to be absent unless you have extreme circumstances. However, illness and unforeseen things happen, so we'll do our best to figure out how to proceed should you be away by necessity. Please see the [UF policy for excused absences](#).

Final Grade Scale

Point Range %	Grade
≥ 93.00	A
≥ 90.00	A-
≥ 87.00	B+
≥ 83.00	B
≥ 80.00	B-
≥ 77.00	C+
≥ 73.00	C
≥ 70.00	C-
≥ 67.00	D+
≥ 63.00	D
≥ 60.00	D-
< 60.00	E

Course Policies and Expectations

Participation as a community of learners

PARTICIPATE. Ask questions. Connect with one another. Meet your instructor during office hours. We are a community of learners!

Academic Honesty

Any acts of cheating, plagiarism, or other forms of academic dishonesty will result in, **at minimum, a 0 grade for the assignment or test AND a reduction in the course grade by 1 letter**. Sharing information about tests students in future or past classes, or posting on social media information about same, is a serious act of academic dishonesty. Turing in assignments that match classmates' is plagiarism. Unauthorized or undisclosed

use of generative AI is plagiarism. If you witness any instances of academic dishonesty in this class, notify the instructor.

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Student Honor Code. On all work submitted for credit by Students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. For additional information on academic honesty, please refer to the UF student honor code at: <https://policy.ufl.edu/regulation/4-040/>

Interactions with classmates and instructor

Behave with courtesy towards your fellow students and the instructor and TA. This is particularly important for peer reviews and in discussions where you are commenting on the work of other students. Students who are rude or disrespectful will be blocked from future participation (with corresponding loss of points).

Accommodations for Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center in Reid Hall (352-392-8565) by providing appropriate documentation. Please see the website for more information at: <https://disability.ufl.edu/>. Once registered, students will receive an accommodation letter that must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester. Accommodations are only available to students with this documentation from the DRC, and accommodations are not retroactive (i.e. accommodations cannot be made for assignments submitted prior to Dr. Meadows receiving the letter).

Expected Workload

The UF College of Liberal Arts and Sciences requires that each student devotes on average 3-4 hours per week per credit-hour to each course during a regular 15-week semester or the equivalent total hours divided over a shorter period. Marine Biology is a 4-credit course, which means a total of 180-240 total hours. Divided over 6 weeks, this equates to a minimum of ~30 hours per week devoted towards the course to be successful, including structured time during class and field activities and time working independently outside of class. Keep in mind that all of you are taking an additional 3-credit course as well (~22.5 hours per week), so time management will be essential both pre-trip and during the field component of the course. We will ABSOLUTELY have an amazing time, but we will need to be mindful of striking a balance between fun, devoting sufficient effort to academics, and getting enough rest to stay healthy and happy.

UF Evaluation Process

If you have suggestions on how to make the course better, please feel free to communicate with Dr. Meadows at any point!

Students are also expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available from [the Gatorevals website](#). You will be notified when the evaluation period opens, and can complete evaluations through the email you receive from GatorEvals, in the Canvas course menu under GatorEvals, or via [the evaluation system](#). Summaries of course evaluation results are available at the [public results website](#).

Getting Help

Questions and Concerns

If you have a question or concern, please don't wait to get it addressed until it is too late! We will be in communication daily due to the nature of this study abroad field course, but you still need to let us know if you have any kind of issue come up so that we can work on a solution.

Illness or Emergency

If you have an illness or emergency prior to our trip, please email Dr. Meadows and Ashley as soon as possible. During the trip, please call and/or text us both immediately. **Dr. M: (352) 222-1539; Ashley: (772) 708-6587**. We will coordinate with others – numbers provided below and on the emergency contact handout just in case. Be sure to have all of these numbers programmed into your phone and bring a printout of the handout.

General Emergency Phone Numbers in Ecuador: Emergency: 911; Police: 101; Fire: 102; Ambulance: 131

UFIC 24-hour Emergency Contact: John Mulligan: Office: (352) 273-4439, Cell: (352) 275-1647 or (352) 246-8148

USFQ (local host) Quito Emergency (outside business hours): +593 98 083 4444

USFQ (local host) Galapagos Emergency (outside business hours): +593 98 130 8687

Health and Wellness

- [U Matter, We Care](#) ASKING FOR HELP IS A SIGN OF STRENGTH. If you or a friend is in distress, contact If you or someone you know is in distress, please contact counseling 24/7 352-392-1575, or visit [umatter.ufl.edu](#) to refer or report a concern and a team member will reach out to the student in distress. The Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center.

- [Dean of Students Office](#) (352-392-1261) provides a variety of services to students and families, including [Field and Fork](#) (UF's food pantry) and [New Student and Family programs](#)
- [Counseling and Wellness Center](#) (352-392-1575) provides counseling and support as well as crisis and wellness services including a [variety of workshops](#) throughout the semester (e.g., Yappy Hour, Relaxation and Resilience).
- [Office of Student Veteran Services](#) (352-294-2948 | vacounselor@ufl.edu) assists student military veterans with access to benefits.
- [UF Police Department](#) (352-392-1111 or 9-1-1 for emergencies)
- [Student Health Care Center](#) (352-392-1161) provides 24/7 information to help you find the care you need.
- [UF Health Shands Emergency Room/Trauma Center](#) (352-733-0111) for immediate health care, call or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608
- [GatorWell Health Promotion Services](#) (352-273-4450) includes prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success.

Academic and Student Support

- [Career Connections Center](#) (352-392-1601 | CareerCenterMarketing@ufsa.ufl.edu) connects job seekers with employers and offers guidance to enrich your collegiate experience and prepare you for life after graduation. Visit in the Reitz Union Suite 1300.
- [UF Libraries Support](#) (866-281-6309 | ask@ufl.libanswers.com) offers various types of assistance with respect to using the libraries or finding resources.
- [CLAS Academic Resources](#) (352-392-2010) offers general study skills and free tutoring.
- [UF Writing Studio](#) (352-846-1138) can help with brainstorming, formatting, and writing papers.
- [Dean of Students Office](#) (352-392-1261) provides a variety of services to students.

Schedule (for both courses)

Pre-trip class meetings

All readings are from the book *Galapagos: A Natural History* (see Galapagos Ecology and Evolution syllabus).

Date	Pre-class Reading and Questions	Activities
Monday 5/12	Chapter 1 (Introduction) Chapter 2 (History) Chapter 3 (Islands, Oceanography, Ecology)	Introductions and Syllabi Organism Presentation sign-up Documentary Discuss Chapters 1, 2, and 3 Lecture: Currents, upwelling, ENSO Reflection

Date	Pre-class Reading and Questions	Activities
Wed 5/14	Chapter 4 (Darwin) Chapter 5 (Geology)	Discuss Chapters 4 and 5 Lecture: Plate tectonics and hydrothermal vents Lecture: Diversity of Invertebrates and Fishes REEF Fish ID
Fri 5/16	Chapter 6 (Tortoises and Adaptation) Chapter 7 (Other Reptiles, Sexual Selection)	Fish ID Activity Discuss Chapters 6 and 7 Work on Research Proposals The Mating Game Activity Organisms Presentations 1 and 2 Travel Discussion
Mon 5/19	Chapter 8 (Seabirds) Chapter 9 (Land Birds, Colonization, Adaptive Radiation)	Organism Presentations 3-6, 7-10 Discuss Chapters 8 and 9 Lecture: Marine Tetrapods Introduction to iNaturalist, eBird, and Merlin apps
Wed 5/21	Chapter 10 (Other Marine Tetrapods, Fishes)	Birding on campus – practice with binoculars, eBird/ Merlin Organism Presentations 11-16 Discuss Chapter 10 Work on Research Proposals
Fri 5/23	Chapter 11 (Conservation) Chapter 12 (Islands)	Animal ID Activity Discuss Chapters 11 and 12 Culture Activity Reflection Research Proposal Presentations Logistics and Travel Discussion

Travel Itinerary

Note: This itinerary is subject to change. Some details are not yet available and are being determined by our host university program (Universidad San Francisco de Quito) in Ecuador.

Meals: All breakfasts provided with host families or at hotels. Dinners provided when with host families, independent where noted on the schedule. Lunches are typically independent except where noted. You will need to budget for your meals traveling to/from Ecuador, a total of 12 lunches, and a total of 6 dinners.

Date	Activities
Quito, Ecuador mainland, Andes Mountains; 2 nights at Hotel Cumbaya, breakfast provided	
Mon 5/26	Arrival in Quito (evening) Transfer to Hotel Cumbaya near USFQ's campus (group transfer or taxi) (no meals provided; dinner while traveling or independently)
Tues 5/27	USFQ Cumbaya Orientation and Campus Tour Welcome Lunch La Línea provided Dinner independent
Tandayapa, Ecuador Mainland, Cloud Forest; 1 night at Hotel Bellavista, 1 night Hotel Cumbaya, breakfast provided	
Wed 5/28	Travel to Tandayapa Field Station Cloud forest hiking and birding (night at nearby Hotel Bellavista) All meals provided
Thu 5/29	Cloud forest hiking and birding Lunch at Tandayapa Station provided Return to Quito for the night at Hotel Cumbaya Dinner independent
San Cristobal Island, Galapagos; 14 nights with host families; all breakfasts and dinners provided with host families, all lunches independent unless otherwise noted for full day trips	
Fri 5/30	Transfer to Quito Airport Flight to Galapagos Islands Transfer to host families/ hotel Welcome Lunch provided USFQ Galapagos Orientation and Campus Tour
Sat 5/31	Highlands exploration with stops in different ecological zones El Junco Lake Galapaguera (Tortoise Center) Lunch provided Puerto Chino Beach
Sun 6/1	Snorkel instruction and practice at Playa Mann Snorkel at La Loberia, Fish ID and photography Fish ID and data entry/analysis
Mon 6/2	Visit potential sampling sites for Research Project, initial observations and develop ideas, Fish ID and photography:

Date	Activities
	<ul style="list-style-type: none"> • Interpretation Center • Frigate Bird Hill • Tijeretas • Punta Carola <p>Fish ID and data entry/analysis, split into research groups based on interests</p>
Tue 6/3	<p>Free/rest time</p> <p>Meet independently with your group to develop research ideas and do background research, data collection methods</p> <p>4 PM meeting at Galapagos Science Center to discuss project ideas with group</p>
Wed 6/4	<p>Free/rest time</p> <p>Meet independently with your group to discuss feedback and data collection plan</p> <p>4 PM meeting at Galapagos Science Center to finalize data collection plan</p>
Thu 6/5	<p>Research Project Data Collection Day 1, visit chosen research site with instructors and park naturalist guides</p> <p>Data processing and work independently with your group</p>
Fri 6/6	<p>Research Project Data Collection Day 2, visit chosen research site with instructors and park naturalist guides</p> <p>Data processing and work independently with your group</p>
Española Island, Galapagos (Day Trip – night back on San Cristobal)	
Sat 6/7	<p>Day trip to Española Island (Wandering Albatross breeding colony, snorkeling)</p> <p>Lunch provided</p>
San Cristobal Island, Galapagos (Return); nights/breakfasts/dinners continued with host families	
Sun 6/8	<p>Hacienda Tranquila – exploration of agriculture and conservation, visit endemic Galapagos Petrel nests</p> <p>Lunch provided</p>
Mon 6/9	Free/Rest Day
Tue 6/10	Free/Rest Day
Wed 6/11	<p>Lecture: Human history in the islands</p> <p>Lecture: Citizen Science Initiatives (Cetaceans, Sharks), Community Outreach Programs</p> <p>Research Project Presentations</p>

Date	Activities
Thu 6/12	Kicker Rock Trip (snorkeling) Lunch provided
Floreana Island, Galapagos; 1 night in hotel; all meals provided	
Fri 6/13	Transfer to Floreana Island (Interisland Speedboat) Visit highlands Asilo de la Paz, Cueva de los Piratas, Galapaguera (Tortoise Center) La Loberia snorkel All meals provided
Isabela Island, Galapagos; 2 nights in hotel; all breakfasts provided	
Sat 6/14	Transfer to Isabela Island (Interisland Speedboat) Wetlands and Wall of Tears Lunch provided Dinner independent
Sun 6/15	Free/Rest Day
Mon 6/16	Sierra Negra and Chico Volcanos Lunch provided Dinner independent
Santa Cruz Island, Galapagos; 2 nights in hotel; all breakfasts provided	
Tue 6/17	Free Morning (on Isabela) Transfer to Santa Cruz Island (Interisland Speedboat) Charles Darwin Research Station Lunch independent Dinner independent
Wed 6/18	El Chato II Ranch (Tortoises) Lava Tunnels Lunch independent Bahia Tour – Las Grietas Farewell Dinner provided
Quito, Ecuador mainland, Andes Mountains; 1 night at Hotel Eurobuilding near airport; breakfast provided	
Thu 6/19	Transfer to Baltra Airport Fly back to Quito Transfer to hotel near airport

Date	Activities
	Dinner provided
Fri 6/20	Transfer to Quito Airport (free shuttle from hotel) Departure Flight Home Lunch and dinner independent in Quito or while traveling