Course Description

Course will provide students with a hands-on understanding of the ecology of marine and terrestrial ecosystems of central and southern Cuba, the effects of land-use and management activities on ecological communities, and an introduction to Cuban politics, history, and culture.

**Prerequisites:** Biology 1 & 2 (or equivalent), **experienced swimmer, snorkeling experience**

Coral reefs are akin to tropical rainforests with regard to their biodiversity and complexity but are threatened by abiotic and biotic factors such as climate change, over-fishing, and coastal land-use activities. Although rare, pristine coral reefs offer a unique opportunity to study many aspects of marine ecology and biology in a geographically small area. In parallel, tropical terrestrial ecosystems harbor intriguing biodiversity and provide critical ecosystem services, but they are heavily impacted by human land-use, land degradation such as deforestation, invasions of non-native species, and poorly managed agricultural operations. To protect biodiversity and improve management, it is critically important to understand how tropical marine and terrestrial ecosystems interact along coasts, on particular on islands.

**Instructors**

- Dr. Donald C. Behringer, Associate Professor  
  Email: behringer@ufl.edu  
  Office: Fisheries and Aquatic Sciences, Building 544, Rm. 24  
  Telephone: (352) 273-3634  
  Office hours: Upon appointment

- Dr. S. Luke Flory, Associate Professor  
  Email: flory@ufl.edu  
  Office: McCarty B 3127A  
  Telephone: (352) 294-1581  
  Office hours: Upon appointment

- Dr. Jorge Angulo, Visiting Scholar  
  Email: jorgeangulo@ufl.edu  
  Office: McCarty B 099  
  Telephone: (352) 214-5177  
  Office hours: Upon appointment

**Student Learning Outcomes**

*At the end of this course, students will:*

- Know the structure, function, and connectivity of coastal marine habitats such as coral reefs, and seagrass beds, and terrestrial ecosystems such as forests, woodlands, and agroecosystems.
- Know the common coral reef, forest, and agroecosystem taxa and be able to identify common organisms
- Know the theories, mechanisms, and management actions that are believed to drive coral reef, tropical forest, and agroecosystem structure
• Understand how coastal and terrestrial human activities affect nearshore marine and upland communities
• Have an understanding of contemporary issues surrounding marine and tropical island ecology such as the potential effects of climate change, non-native species invasions, and conservation/management issues such as forest preservation and Marine Protected Areas
• Understand the history, present political relationship, and cultural connections between Cuba and the US
• Gain an appreciation for the perspective and world view of their Cuban contemporaries at the University of Havana

Course Meeting Times
The class will meet on campus two times during the week of May 8th to learn background information and prepare for an intensive 13-day trip to Cuba from May 12th – 24th.

Recommended (optional) Texts/Readings

6. Primary literature will be assigned to complement or supplement the material covered in lecture each day.

Course Format, Policies on Attendance and Make-up Exams

Course format:
The format of the course will be introductory, planning, and discussion meetings on campus followed by activities in and around Havana, Viñales Valley, Bay of Pigs, and on the Isle of Youth. The trip to Cuba will involve a mixture of field and lab studies, and classroom and field lectures and discussions. On the final day of the course students will submit their journals and take an end of course exam online following their return to the US.

Attendance Policy:
Attendance is required at all class meetings and the field trip to Cuba.

Make-up Policy:
Late assignments will not be accepted without prior consent of the instructor.

Assignments

Journal: Students will be required to keep a field journal to record observations, ideas, and a list of the organisms encountered during field excursions. The journal is 150 of the 350 total points of the
course grade and is due prior to leaving Cuba. Journals will be graded on organization, detail, and content. Students will be supplied with waterproof notebooks for keeping the journal.

**Literature Discussion:** Student teams of 2-3 must select a paper from those supplied by the instructor, provide a brief (10 min) presentation on, and lead discussion during a class meeting session. All students are expected to read the papers and participate in the discussion. Presentation of a paper and leading discussion will count for 50 points of the course grade.

**Exam:** A final exam will cover all of the material presented in the course and count for 150 of the 350 total points. It will include multiple choice, short answer questions, and brief essays.

---

**Evaluation of Student Learning**

<table>
<thead>
<tr>
<th>Points</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>Field journal</td>
</tr>
<tr>
<td>50</td>
<td>Lead primary literature discussion</td>
</tr>
<tr>
<td>150</td>
<td>Final exam</td>
</tr>
<tr>
<td>350</td>
<td>Total</td>
</tr>
</tbody>
</table>

**Grading Scale**

An “A” represents significant scholarly achievement and will require a minimum numerical score of 90% or better. To earn a “B” [the minimum acceptable performance level for a graduate student], overall numerical scores in the range of 80 to 89% need to be achieved. Numerical grades less than 80% will be assigned letter grades in the “C” range, or below, as appropriate.

For additional information on the university grading policy please see: http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html

---

**Schedule of Class Activities and Topics**

**Course Introduction, Scheduling, and other Logistics**

May 8 - 12

**Arrive in Havana, Cuba**

May 12th

Scheduling of lectures and activities will be contingent upon weather and sea conditions so will be subject to change. BLD = Breakfast, Lunch, Dinner meal cost included where noted. Details will be supplied during the first class meeting but general topics will include:

Day 1 (Friday): Cuban culture and exploration of Havana (L)


b. Lunch at Paladar.

c. Discussion of Cuban history and politics with University of Havana faculty.

d. Time to explore on your own.
Day 2 (Saturday): Coastal marine communities – north coast (B)
   a. Travel to Baracoa to snorkel through seagrass meadows and visit Elkhorn coral reef.
   b. Visit Center for Marine Research of the University of Havana.
   c. Meet UH professors and students and hear about their research.
   d. Snorkel to observe nearshore marine environment near Havana harbor

Day 3 (Sunday): Mainland Cuba ecology (BLD)
   a. Travel to Viñales.
   b. Bus discussion with Cuban faculty on anthropogenic impacts to terrestrial and coastal habitats.
   c. Visit Robaina tobacco plantation and learn about growing and processing.
   d. Tour Finca Paradise agroecology farm and have for dinner.
   e. Stay night in Casa Particulares.

Day 4 (Monday): Mainland Cuba ecology (Viñales continued) (BLD)
   a. Hike across Viñales Valley to mogotes, caves, and forest ecosystems. Option to swim in underground lake.
   b. Eat lunch at ranch on return from hike.
   c. Traditional Cuban pig roast at organic farm.
   d. Stay night in Casa Particulares.

Day 5 (Tuesday): Travel to Isle of Youth (BLD)
   a. Take private ferry from Surgidero de Batabano to Isle of Youth.
   b. Stop at lobster fishery staging station.
   c. Stop for snorkeling in marine reserve.
   d. Evening orientation and coursework.
   e. Free time to prepare literature discussions.

Day 6 (Wednesday): Coral reef structure and form – the corals (BLD)
   a. Explore back reef lagoon.
   b. Explore fore reef.
   c. Visit Punta Frances beach station.
   d. Board and tour bonito fishing vessel if available.

Day 7 (Thursday): Isle of Youth exploration (BLD)
   a. Visit Isle of Youth schools.
   b. Visit panoptic prison.
   c. Hike to soviet era military outpost.
   d. Visit Marabu reclamation site and survey Marabu invasion site.

Day 8 (Friday): Reef food webs and adjacent habitats (BLD)
   a. Explore seagrass, mangrove, and hard-bottom habitat.
   b. Snorkel around lobster fishing casitas.
   c. Snorkel spur and groove reef.

Day 9 (Saturday): Ferry back to Surgidero de Batabano and transfer to Bay of Pigs (BL)
   a. Free afternoon/evening to explore town of Caleton.
Day 10 (Sunday): Bay of Pigs (B)
   a. Explore coastal coral reef habitats and springs along east shore of the Bay.
   b. Visit Bay of Pigs invasion sites and memorials.

Day 11 (Monday): Zapata Swamp (BL)
   a. Explore Zapata swamp while hiking.

Day 12 (Tuesday): Havana (BD)
   a. Visit historic fort El Morro
   b. Visit Hemingway house
   c. Visit Revolution Square
   d. Visit Museum of the Revolution
   e. Enjoy a farewell dinner at a Paladar

Day 13 (Wednesday): Depart Havana for Gainesville (via Tampa) (B)

Final exam (online)  June 1st

Additional References

Coral Reefs of the USA. Riegl and Dodge. Springer Verlag.
Native Trees and Shrubs of the Florida Keys: A Field Guide/Also South Florida, Cuba, the Bahamas by James Scurlock. Hafftime Enterprises.
Web of Knowledge
http://apps.isiknowledge.com/UA_GeneralSearch_input.do?product=UA&search_mode=GeneralSearch&SID=4C5mNGg@8e3@Ggm611N&preferencesSaved=

Other Information

Academic Honesty, Software Use, UF Counseling Services, Services for Students with Disabilities

In 1995 the UF student body enacted an honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.
The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

On all work submitted for credit by students at the university, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean or Student Honor Court.

(Source: 2010-2011 Undergraduate Catalog)

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

This policy will be vigorously upheld at all times in this course.

Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/
  Counseling Services
  Groups and Workshops
  Outreach and Consultation
Students with Disabilities
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.
0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)