Course Description

Course will give students a hands-on understanding of the marine and coastal ecosystems of central and southern Cuba, the impacts of human land-use activities on ecological communities, and an introduction to Cuban history and culture.

**Prerequisites:** BSC 2010 & 2011 (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. However, in tropical systems heavily impacted by human land-use, land degradation such as deforestation, invasions of non-native species, and poorly managed agricultural operations can degrade coastal ecosystems and impact nearby coral reefs.

**Instructors**

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

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

Dr. Thomas Frazer, Professor  
Email: frazer@ufl.edu  
Office: 103 Black Hall  
Telephone: (352) 392-9230

**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 to mangrove forests and agricultural enterprises
- Know the common coral reef taxa and be able to identify common reef organisms
- Know the theories and mechanisms that are believed to drive coral reef community structure
- Understand how coastal and upland human activities affect nearshore marine communities
- Have an understanding of contemporary issues surrounding marine and coastal 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 three times during the week of May 11th to learn background information and prepare for an intensive 11 day trip to Cuba from May 17th – 27th. The class will then meet again on campus for a trip follow up and exam on June 10th.

Required Texts/Readings

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

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<th>Course Format, Policies on Attendance and Make-up Exams</th>
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Course format:
The format of the course will be introductory, planning, and discussion meetings on campus followed by a week of activities in Havana and on the Isle of Youth. The week in Cuba will involve a mixture of field studies, lab studies, and classroom lectures/discussions. Upon return to Gainesville there will be a final meeting for an exam and submission of research project reports.

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 100 of the 350 total points of the course grade and is due upon arrival in Gainesville. Journals will be graded on organization, detail, and content. Students will be supplied with underwater slates for recording observations and waterproof notebooks for keeping the journal.

**Literature Discussion:** Each student must select a paper from those supplied by the instructor, provide a brief (5 min) presentation on, and lead discussion during a class meeting session while on
the Isle of Youth. All students are expected to read the papers and participate in the discussion. Presentation of a paper 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 200 of the 350 total points. It will include short answer questions, brief essays, and a series of images or organisms for identification (must know genus and species names).

### Evaluation of Student Learning

Final grades will be assigned based on the percentage of the total points earned.

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<tr>
<th>Points</th>
<th>Activity</th>
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<tr>
<td>100</td>
<td>Field journal</td>
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<td>50</td>
<td>Lead primary literature discussion</td>
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<td>200</td>
<td>Final exam</td>
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<td>350</td>
<td>Total</td>
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### 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 11-15

**Arrive in Havana, Cuba**

May 17

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 (Sunday): Cuban culture and exploration of Havana (L)
   
a. Walking tour of oldtown Havana
   
b. Presentation and discussion of Cuban-US history with Cuban professors and students

Day 2 (Monday): Terrestrial resource use and management in Cuba (B)
   
a. Visit a ‘pristine’ natural coastal preserve
   
b. Visit area impacted by non-native plant invasions (e.g., Marabu ‘sicklebush’ tree)
Day 3 (Tuesday): Coastal marine communities – north coast (continued) (B)
   a. Travel to Rincon 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.
   d. Explore land/water interface near Havana (impacted)
   e. Snorkel to observe nearshore marine environment near Havana harbor

Day 4 (Wednesday): Mainland Cuba ecology (B)
   a. Travel to Viñales
   b. Bus discussion on anthropogenic impacts on coastal and marine habitats
   c. Visit Las Terrazas community ecotourism initiative
   d. Visit a well-managed forest and agroecology site
   e. Visit a poorly managed forest and agroecology site
   f. Stay night in Casa Particulares

Day 5 (Thursday): Mainland Cuba ecology (Viñales continued) (B)
   a. Visit mogotes, caves, and forest ecosystems
   b. Mil Cumbres National Park or visit Soroa Botanical Orchid Garden
   c. Stay night in Casa Particulares

Day 6 (Friday): Travel to Isle of Youth (BLD)
   a. Take private ferry from La Coloma to Isle of Youth
   b. Stop at lobster fishery staging station
   c. Stop for snorkeling in marine reserve
   d. Evening orientation and coursework

Day 7 (Saturday): Coral reef structure and form – the corals (BLD)
   a. Gear checkout and water test
   b. Explore back reef lagoon
   c. Explore fore reef

Day 8 (Sunday): Reef associated invertebrates and vertebrates (BLD)
   a. Examine back reef lagoon inverts, collect, and bring to lab for observation and identification (return to location of capture)
   b. Learn fish census techniques
   c. Visit Isle of Youth “schools” that give the island its name
   d. Night snorkeling trip to back reef lagoon

Day 9 (Monday): Reef food webs and adjacent habitats (BLD)
   a. Learn benthic/sessile field measurement techniques
   b. Food web/biodiversity measurements on fore reef and back reef
   c. Explore seagrass, mangrove, and hard-bottom habitats
   d. Learn techniques for measuring seagrass health and productivity

Day 10 (Tuesday): Ferry back to La Coloma and transfer back to Havana (BL)
   a. Free afternoon/evening to explore Havana


Day 11 (Wednesday): Independent studies (via Tampa) (BD)
   a. Visit historic fort El Morro
   b. Explore on your own.
   c. Enjoy a farewell dinner at a Paladar.

Day 12 (Thursday): Depart Havana for Gainesville (via Tampa) (B)

Return to Gainesville (turn in journals)                        May 28

Final class meeting and exam (face-to-face or online)          June 10

**Additional References**


**Coral Reefs of the USA.** Riegl and Dodge. Springer Verlag.

**Marine Plants of the Caribbean.** Littler and Littler.

**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@GGr611N&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

  Self-Help Library

  Training Programs
Community Provider Database

- Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu](http://www.crc.ufl.edu)

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)