

**PCB 6927 Marine Ecology – 4 Credits
Spring 2009
Dr. Brian Silliman, Zoology
San Salvador, Bahamas**



Instructor: Dr. Brian Silliman; email: brs@ufl.edu.

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Application: See [Sillimanlab.com/courses](http://sillimanlab.com/courses)

Required Text:

Marine Community Ecology, M. Bertness, M. Hay, and S. Gaines eds. Sinauer Press, NY, NY 2001.

Class Time and Place:

Lecture and Seminar Discussions: Tuesday: CRR 120 Period 11-E-1 (6:15-8:15).

Laboratory: 10-day Spring Break field trip. March 6-15.

COST: NORMAL TUITION FOR 4 HOURS OF CREDIT + ~ \$1500.00/ student (this fee covers all costs of the trip except airfare) + AIRFARE THAT YOU PURCHASE.

Course Description: The course is designed to introduce students to the plants and animals found in the marine and terrestrial environments of the Caribbean and to study their adaptations and interactions in the context of community ecology. Fishes, invertebrates, reptiles and marine algae will be the major groups encountered and snorkeling will be used for observation and collection. (SCUBA certification is not required.) Field work will be the main activity and attention will

be given to collection methodology, identification, sampling techniques, research design and other useful field skills.

Lectures, lab work and readings will supplement the field work, as will an independent research project for 5 days in the shallow waters surrounding the island of San Salvador, Bahamas. The coral reefs at San Salvador are very rich, quite accessible and easily studied.

A typical day's work may involve visits to two or three field locations, a few lectures and laboratory time. A weekly, 2 hour lecture period in Gainesville just prior to departure will be used for lectures, discussions and to introduce the observation, collection and identification techniques to be employed in the course. Also, a local, overnight field trip will be scheduled to The UF Seahorse Key Marine Lab to begin to introduce the students to field sampling techniques. During the first 5 days spent on San Salvador, the educational emphasis will be focused on visiting all of the 12 or more ecological habitats (e.g. seagrass, mangroves, coral reefs) on the island and to observe the organisms in situ. Following the site visits, there will be discussions about adaptations seen in the field and the significance of these adaptations in the context of morphology, anatomy, physiology, behavior, development and ecology. Another major focus of the course is on the variety of biological interactions that occur on the reefs and their ecological/evolutionary implications.

Although the major theme of the course is biological, it seems appropriate that attention be paid to the significant social, cultural, and historical attractions found on the island. To this end, interactions with the local culture are encouraged, e.g. the opportunity for UF students to teach one afternoon in the local grade school or to take local high school students on educational, marine walks along the shorelines. UF students will also come into contact with individuals conducting current research projects in San Salvador in the fields of geology, anthropology, archaeology, pathology, and conservation. Visiting scientists working at the Center are invited to speak about their areas of expertise when appropriate.

Location: The island of San Salvador, easternmost island in the Bahamas. The San Sal program is housed at the Gerace Research Center, a science laboratory/field station chartered by the Bahamian Government and operated under an American director. Facilities include vehicles for class trips, labs with running sea water, air-conditioned lecture rooms, specimen repository, library and canteen. Food and lodging are provided at the station. Clear water and spectacular field sites with abundant, shore-accessible coral reefs for serious study are the major attractions. Accommodations at the Center are rustic but quite adequate.

Prerequisites: Intro Biology or their equivalents or permission of instructor.

Also, an interest in organism biology, hard work, and a desire to participate in an educational experience that emphasizes instructor-class interactions and approaches not available in a typical course. First year and upper-class students are invited to apply. This is a serious upper-level course but it is not restricted to biology majors or those planning careers in biology/ecology.

Selection of students: Selection for UF students in the Bahamas will be based upon several factors which include: a) year in school b) biological and career based interests c) experience, d) reason for wanting to take the course, e) academic performance, f) a personal interview. Successful applicants will be required to make an initial deposit in order to reserve space in the program. Interviews will be set up once applications are received.

Course Objectives:

1. Teach students through hands-on learning, intensive field experiments, and lectures the importance of Creativity, Motivation, Patience, Persistence, and Observation in Science and Marine Ecology.
2. Provide students field experience at the beginning of their education.
3. Empower students to do science and think independently over a short period.
4. Teach students to be synthesizers and critical thinkers.
5. Teach students to do science from the beginning to the end.
7. Teach students to convey effectively their scientific thoughts and analyses in writing and oral presentations.
8. Teach graduate students how to do Science and Ecology *based on original observations in nature*.
9. Gain a broad understanding of the ecology and natural history of marine organisms processes in the Caribbean.

GRADING:

- 1st Test: 15%
- 2nd Test: 15%
- Independent Projects: 25%
- Logs: 30%
- Final: 15%