



**ZOO 391 Ecosystems and Biodiversity of Southern Florida
Course Outline and Schedule
Winter 2012**

Pre-requisites : BIO 133

Course Description

This course will be a field course. Students will study the aquatic and land ecosystems of southern Florida (coral reefs, sandy shores, riparian springs, estuaries, rain forest). It will include a trip to the dolphin research station in the Florida Keys and involvement in research projects within the Everglades National Park.

Dates: Feb. 16-23, 2013

Instructor : Dr. Carol Gibbons Kroeker

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Texts : Priceless Florida; E.O. Wilson

The Everglades Handbook: Understanding the Ecosystem, Second Edition;
Thomas E. Lodge; 1994

National Audubon Society Field Guide to Florida; Peter Aldin, Rick Cech, 1998

Optional: Laboratory Methods for General Ecology, by James Brower, Jerrold Zar, Carl N. von Ende, McGraw-Hill, 2008.

Learning Objectives:

1. Students will have the opportunity to study the marshland and marine ecosystems in Southern Florida - they will be introduced to bird, reptile and mammal species unique to the area
2. Students will be involved in a habitat restoration project within the Everglades National Park
3. Students will collaborate on research projects within the Everglades National Park. The research completed will be presented to the group.
4. Students will gain knowledge in spring and estuary ecology and conservation, manatee and alligator biology and ecology, and the impact of development on delicate marine ecosystems
5. Students will gain experience in snorkeling and kayaking – and these skills will allow the students to gain access to more remote areas of the Everglades.
6. Contact and cultural exchange will occur with University students and Professors at Florida International University.

Mark Distribution	:	Pre-trip work	15%
		Field work	30%
		Research project	15%
		Research presentation	10%
		Research and term papers	30%

With seminars and assigned pre-readings (current research paper and the texts), students will complete 20 hours of course work before the trip in February.

On-course, this 8-day program will include over 30 hours coursework and instruction in subjects such as Florida biodiversity and ecology, dolphin biology and ecology, alligator biology and ecology, everglades and wetlands ecology, estuaries, Florida ornithology, coral reef biology and ecology, and research methodology. Instruction will include teaching from local ecologists and biologist working in the Everglades National Park.

Research data collection will be made in conjunction with Florida International University and the Everglades National Park Service.

Students will be actively involved in a major habitat restoration project going on near Royal Palm Hammock where invasive Brazilian Pepper is being removed - there has been enrichment planting of pines and other native species in higher elevation parts of the site (about 6000 acres total), and students will be able to do some additional planting and to monitor survival/growth of previous plantings.

Collaboration will also be made with the Dolphin Research Centre in Sandy Key. Students will be able to swim with the manatee and the dolphins at the centre.

The students will complete post-trip data analysis and complete two research papers as well as a research presentation (on-site and post-trip)

Trip Itinerary:

Day1: Arrive in Miami

Day 2-3: Biscayne Bay National Park and the Florida Keys (Pidgeon Key)

Looee Key Marine Sanctuary – coral reef investigations

Examination of the coral reefs – assessment for species at risk

Manatee studies (species counts and ecology)

Habitat restoration projects

Day 3-4: Marine Lab in Key Largo, Florida

Biodiversity studies – invertebrate and vertebrate species of the local ecosystems

Day 4-8 – Everglades National Park

Biodiversity and Ecology studies of the wetlands and estuaries of the region.
Dolphin Research Centre – Grassy Key
Species counts and assessment – birds and alligators of the region
Habitat restoration projects
Removal of exotic species

Itinerary subject to change

We will be travelling with Adventures in Florida, which has recently been appointed the “Charter Member” of American Rivers “River Ambassador” program. American Rivers is the leading organization to protect and restore the nation’s rivers and streams. This group has an ecological focus –

Students will experience mangrove tunnels, learn the three types of mangrove and its purposes. There will be an abundance of unique wildlife. Time will be spent identifying birds, reptiles, and mammals

The trip will include extensive kayaking into remote areas of the Everglades National Park and nights will be spent camping in the area. The Everglades is comprised of low islands (keys), tangled mangrove swamps, flat saw-grass prairies, pinewoods, and tropical hammocks and is the third largest national park in the U.S.

Within the Florida Keys, the students will be kayaking and snorkeling at Biscayne Bay National Park – this will provide hands-on exposure to the coral reefs of the area.

Collaborations will be made with:

- Florida International University (FIU)
 - Devon Graham is a leading researcher in the Florida Everglades and we hope to be involved in his current research project.
 - Joel Trexler (another professor at FIU) will be providing us with some guest lectures on the current ecological state of the park and the region.
- Florida Everglades National Park
 - Ranger Kevin Bowles Mohr will be in charge of several volunteer projects we’ll be involved with - including a reforestation project.
 - We will also receive several lectures on the ecology of the park by rangers and learn about the research projects being conducted in the park.
- Dolphin Research Centre
 - Students will be given the opportunity to be involved in animal rescue care of several animal species
 - Students will have an opportunity to interact with the dolphins, manatee, and other mammals in the centre
 - They will be able to swim with the dolphins and manatee
- Looe Key Marine Sanctuary
 - Protective reef – we’ll be snorkeling and doing species counts
- Marine Lab (Key Largo)
 - Students will have an opportunity to see several invertebrate species in their natural habitat.

