

## **CIEE Tropical Marine Biology and Conservation - Bonaire Summer Session**

### **Marine Biology and Ecology of the Southern Caribbean**

**Instructors: Rita Peachey, Ph.D.**

Language of Instruction: English; Contact Hours: 45; Credits: 3 semester/4.5 quarter hours

### **Course Number & Description - BIOL 3001 BONU/ECOL 3001 BONU/RECR 3001 BONU**

Marine Biology and Ecology of the Southern Caribbean introduces students to basic ecological and biological principles such as competition, diversity, symbiosis, disturbance, adaptation, reproduction, as well as basic identification of the major taxa living in coral reef ecosystems. This course will also examine the importance of seagrass and mangrove ecosystems and will cover threats to and conservation of tropical marine ecosystems. SCUBA and snorkeling excursions to the coral reef supplement the lectures and teach scientific research methods for studying marine ecology

### **Learning Objectives**

Upon completion of the course the students will:

- Understand fundamental ecological concepts
- Understand the biology and life history of representative marine species (plant & animal)
- Have a general understanding of the driving forces of coral reefs and their inhabitants
- Recognize native fauna and flora of the coral reef – including species level IDs of common reef inhabitants
- Become familiar with conservation principles and the conservation history of the Bonaire National Marine Park

### **Course Content**

- Intro to the Marine Environment - Oceans and Currents
- Marine Ecosystems and Biodiversity
- Coral Reef Development
- Coral Biology
- Coral ID
- Invertebrate Biology, Ecology, and IDs
- Coral Reef Fish Biology and Ecology
- Coral Reef Fish Behavior and IDs
- Seagrass & Mangrove Ecosystems
- Fisheries, Bioinvasions, Disease
- Marine Reptiles and Mammals
- Marine Protected Areas, Tourism and Reefs
- Symbiotic Relationships and Competition
- Plankton Biology and Ecology
- Conservation Biology
- Terrestrial Influences

## **Course Requirements**

Readings and short research assignments are fundamental components of the course. Students are expected to fully participate in lectures and labs and complete all reading and research assignments prior to class meetings.

## **Textbooks**

No single textbook is required for the course. Research papers and other reference materials will be provided to students throughout the session. If the student would prefer to have his or her own references for the identification part of this course, we will be using the following texts (several sets will be available for student use in the CIEE reference library):

Nybackken, J. 2000, *Marine Biology: An Ecological Approach*, 5<sup>th</sup> Ed., Benjamin Cummings Publ.

Birkeland, C. 1997. *Life and Death of Coral Reefs*. Chapman & Hall.

Deloach, N. 1999. *REEF FISH Behavior: Florida, Caribbean, Bahamas*. New World Publications, Inc.

Humann, P., N. Deloach. 2002. *REEF FISH Identification: Florida, Caribbean, Bahamas Third Edition*. New World Publications, Inc.

Humann, P., N. Deloach. 2002. *REEF CORAL Identification: Florida, Caribbean, Bahamas Second Edition*. New World Publications, Inc.

Humann, P., N. Deloach. 2002. *REEF CREATURE Identification: Florida, Caribbean, Bahamas Second Edition*. New World Publications, Inc.

## **Assessment**

Attendance & Participation 20%; Quizzes 10%; Field Notebook, 20%; Final Exam, 35%; Practical 15%