Course Name: **Applied Marine Ecology in the Cayman Islands**

Course Number: **Applied Science Elective; Greenwood Lab School**

**Course Objectives**

Through this course students will have the opportunity to develop a solid understanding of coral reef ecology and marine biology research design. Currently, coral reefs are in danger of dying off due to a variety of causes. The study, understanding, and conservation of this ecosystem is paramount to maintaining their continued existence on earth. This course will offer students the opportunity to learn about the ecology of coral reefs as well as to study current issues related to their survival. Students will do this through both the land locked lens in Springfield and the first hand lens provided by the Little Cayman Research Center.

**Program Fee:** $2,710

**Program Fee Includes:** Airfare, ground transportation in Cayman, lodging, meals, guides, Study Away student fee, basic medical insurance; separated costs not available.

**Program Fee Excludes:** Passport, SCUBA Certification and Diver's Alert Network Membership, incidentals/misc personal expenses, and souvenirs. $450 Greenwood tuition for Applied Science Elective.

Online applications are due by August 29, 2014. A nonrefundable deposit of $400 will be billed to your student account. To apply, please:

- Go to the Study Away website
- Click Apply Now
- Click Search for a Program (under Apply for a Study Away Program)
- Click Simple Search
- Type in Cayman Islands under Program Name
- Click on Applied Marine Ecology in the Cayman Islands
- Click on Apply Now

Pre-Travel Meetings:
- December 6, 2014
- Application Due:
  - August 29, 2014
- Depart for Cayman Islands:
  - December 13, 2014
- Depart for Springfield:
  - December 20, 2014
- Post-Travel Meeting:
  - December 22, 2014
  - December 23, 2014

Interested in going?

Contact the Program Director,
**Tara J. Bonebrake**, Biology Instructor, Greenwood Lab School
TBonebrake@MissouriState.edu
(417) 836-3222

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Missouri State University Study Away Programs
Jim D. Morris Center, Suite 403
301 S. Jefferson Ave., Springfield, MO 65806
P: 417-836-6368 • E: StudyAway@MissouriState.edu
W: http://international.missouristate.edu/studyaway/
Course Outline & Schedule

Goals:
1. Design and conduct experiments/research in a marine (underwater) environment.
2. Collect and analyze data
3. Creatively share learning so that future participants may benefit and add to ongoing research.
4. Identify issues and concerns related to the continued survival of coral reefs in the Caribbean and around the world.
5. Develop an understanding of coral ecology and the interactions between organisms.
6. Identify different corals, fish and other marine invertebrates.

Students will choose their own topics to research while on island, possible topics could include:
1. Urchin population study
2. Lion fish invasion
3. Climate change
4. Lobster virus research
5. Coral disease
6. Ocean acidity

PRE-TRAVEL

December 6, 2014: Introduce the topic of coral reef ecology and identify issues relative to coral reef conservation. Identify partners and topics for research.

STUDY TOUR

Itinerary subject to change.

December 13, 2014: Travel to Little Cayman, prepare for Dive #1.

December 14, 2014: Certified divers will dive in the morning, afternoon review of coral reef organisms and species. Experiment and research time prep for research dive, with group discussion about experimental design and current research.

December 15, 2014: Dives #1 and #2 data collection. Participation in ongoing station research. Individual projects identifying fish and organisms from prior dives.

December 16, 2014: Research dives #3 and #4. Point of Sand community service project. Shark Water Documentary.

December 17, 2014: Research dives #5 and #6. Work time for research project. Class discussion about project progress, concerns, successes, etc.

December 18, 2014: Research dives #7 and #8. Data collection for station research projects. Analyze data and prepare for final research board.

December 19, 2014: Lecture about the role of island biogeography on evolution and species diversity at Mahogany Bay (iguanas!). Explore Owen Island. Presentations on coral reef issues.

December 20, 2014: Travel home.

POST-TRAVEL

December 22, 2014: Finishing public displays and videos to share project.

December 23, 2014: Final presentations and boards completed.

Course Credit & Requirements

- Project 1: Students will complete a research project identifying an issue relative to marine ecology. They will present their findings to the class while on island.
- Project 2: Students will complete original research, they will make observations, ask a question, design an experiment to help them answer their question, collect data, report the data and provide analysis of the data.
- Findings will be presented in a Board format which will include all parts of a typical biology lab report.
- Video Identification (Class wiki)
- Students will use video recorded during dives to identify fish and creatures in their assigned clip and discuss behavior of their organisms and issues (if any) relative to the identified organisms.
- Reflection
- Students will keep a detailed journal for each day of the trip. They should write down their science observations, challenges, interests, etc.
- There will be discussions held on two evenings allowing students to further reflect about the trip and their discovery process.


Application & Payment Procedures

Greenwood students who are approved by the Program Director may apply. Instructions are included on the program application.

Greenwood Students: A non-refundable deposit of $400 will be billed to your student account upon application (deadline August 29, 2014).

You will receive a second billing on September 26, 2014 and a final billing on October 31, 2014, for the balance of the program fee ($2,310).

Greenwood course tuition ($XXX) will be billed to your student account separately and is due according to the university payment plan.

In order to ensure participation in this Study Away program, each student must pay the entire program fee by November 21, 2014. Alternatively, a student may show proof of the financial aid that will pay for the fee. If a student does not pay the program fee, or does not show proof of financial aid that is sufficient to cover the fee, the student will be withdrawn from the Study Away program, dropped from the course, and his/her airline reservation will be canceled. Visiting students must also fully pay the tuition amount by November 21, 2014 in order to stay enrolled in the program. Estimated program fees are based on rates in effect on the publication date of this flyer and may be subject to change. Program participants agree to a potential increase of up to 10% if rates increase before or during travel.

Cancellation & Refund Policies

- Students who withdraw prior to Oct 31, 2014 will receive a refund of fees paid, less the $400 deposit and any non-refundable purchases made on his/her behalf.
- If a student must withdraw after Oct. 31, 2014 for a bona fide medical reason, s/he will receive a refund of fees paid, less the $400 deposit and non-refundable expenses. A certificate of incapacitating illness or injury from a licensed physician is required.
- Students withdrawing voluntarily after Oct. 31, 2014 will receive no refund.
- When the program begins, no refunds will be issued under any circumstances.
- All notifications of withdrawal must be made in writing and sent to the Program Director and the Director of Study Away Programs at the Study Away Office, Jim D. Morris Center, Suite 403.
- Non-payment of fees does not guarantee withdrawal.