

**Eastern Illinois University
New Course Proposal
BIO 3888G, Subtropical and Marine Ecology**

This format is to be used for all courses submitted to the Council on Academic Affairs and/or the Council on Graduate Studies.

Gray boxes (except check boxes) will expand as you type in them.

Please check one: New course Revised course

PART I: CATALOG DESCRIPTION

1. Course prefix and number, such as ART 1000: **BIO 3888G**
2. Title (may not exceed 30 characters, including spaces): **Subtropical and Marine Ecology**
3. Long title, if any:
4. Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]: Arr-Arr-4
5. Term(s) to be offered: Fall Spring Summer On demand
6. Initial term of offering: Fall Spring Summer Year 2007
7. Course description (not to exceed four lines):

The identification, natural history, and ecology of the flora and fauna of the Bahamas. This course will include a mandatory, week-long field experience to Fofar Field Station on Andros Island, Bahamas. Preference given to students with relevant experience in biology.

8. Registration restrictions:
 - a. Identify any equivalent courses (e.g., cross-listed course, non-honors version of an honors course). **None**
 - b. Prerequisite(s), including required test scores, courses, grades in courses, and technical skills. Indicate whether any prerequisite course(s) **MAY** be taken concurrently with the proposed/revised course. **Permission of instructor.**
 - c. Who can waive the prerequisite(s)?
 No one Chair Instructor Advisor Program Coordinator Other
(Please specify)
 - d. Co-requisites (course(s) which **MUST** be taken concurrently with this one): None
 - e. Repeat status: Course may not be repeated.

Course may be repeated to a maximum of _____ hours or times.

f. Degree, college, major(s), level, or class to which registration in the course is restricted, if any: **None**

g. Degree, college, major(s), level, or class to be excluded from the course, if any: **None**

9. Special course attributes [cultural diversity, general education (indicate component), honors, remedial, writing centered or writing intensive] **None**

10. Grading methods (check all that apply): Standard letter C/NC Audit ABC/NC (“Standard letter”—i.e., ABCDF—is assumed to be the default grading method unless the course description indicates otherwise.)

11. Instructional delivery method: **lecture/laboratory** (This is a drop-down menu.)

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New Course Proposal
BIO 3888G, Subtropical and Marine Ecology

1. Catalog description

- a) BIO 3888G
- b) *Subtropical and Marine Ecology*
- c) (Arr.-Arr.-4)
- d) SU
- e) Marine Ecology
- f) The identification, natural history, and ecology of the flora and fauna of the Bahamas. This course will include a mandatory, week-long field experience to Fofar Field Station on Andros Island, Bahamas. Preference given to students with relevant experience in biology.
- g) Permission of instructor
- h) SU 2007

2. Student Learning Objectives and Evaluation

a) *Student Learning Objectives:* Students will:

- (i) identify and analyze the ecological and taxonomic relationships of the flora and fauna of subtropical terrestrial and marine ecosystems through field experiences (critical thinking)
- (ii) apply critical thinking and knowledge of the scientific method through an original, biological research project (speak and write effectively; critical thinking)
- iii) apply knowledge of scientific information in oral, written, and electronic formats. (speak and write effectively)

b) *Student evaluation:* Evaluation of students will be based on the following:

Oral presentation of background assignment-15%

Field identification-15%

Digital field guide (photographs and written summary of natural history and field observations of Bahamian flora/fauna)-35%

Research project and discussions-35%

Objective	Oral presentation of background assignment (15%)	Field Identification (15%)	Digital field guide (35%)	Research project and discussions (35%)
Identify and analyze ecological and taxonomic relationships of flora and fauna of the Bahamas	X	X	X	X
Apply critical thinking and knowledge of scientific method through research project				X
Apply knowledge of scientific information through oral, written, and electronic formats	X	X	X	X

c) *Not technology delivered.*

d) *Not a graduate level course.*

e) *Writing Active.* Writing activities for this class include written summaries of natural history and field observations and research projects.

3) Outline of Course

a) Prior to leaving for the Bahamas, students will have 3 full days of instruction at EIU; these will be given in 1 1/2 day segments one week apart. The study abroad portion of the course will consist of primarily field experiences (with some lecture) from Saturday – Saturday. The week after returning, there will be two half day sessions at EIU.

Pre-Trip Instruction

Day 1 (full day)

I. Overview of marine ecology (e.g. saltwater as an obstacle and advantage for living, importance of local and global currents, tidal influences, reef formation, etc.)

II. Bahamian terrestrial and marine ecology, part I (e.g. Island location and formation, barrier reefs, island biogeography, etc.)

III. Introduction and development of collaborative, background assignments on selected topics on Bahamian ecology (example topics: cleaner wrasse-customer fish symbiosis, advantages of schooling, colors and patterns in fish as adaptations, maintaining nutrient-rich ecosystems in nutrient-poor water, corals and zooxanthellae, global warming and coral bleaching, pros and cons of tourism and coral reef ecology)

Day 2 (half day)

I. Introduction and application of technology in marine research (e.g. review of scientific method, experimental design issues, challenges faced in marine research, tools used by marine scientists, introduction and practice using digital cameras for research).

Day 3 (full day)

I. Bahamian terrestrial and marine ecology, part II (e.g. formation and maintenance of terrestrial and oceanic blue holes, plant communities and physical environments, causes and consequences of island endemism).

II. Oral presentations of background assignments

Day 4 (half day)

I. Bahamian history and culture

II. Best practice in study abroad experience

Study Abroad Trip: Fofar field station, Andros Island, Bahamas

Week long experience will have the following general pattern (specific schedule will depend on weather and availability):

Morning: Field trip to select terrestrial and marine locations (e.g. cays, patch/fringing reefs, barrier reefs, sand bars, tidal flats, tide pools, blue holes, mangrove communities, subtropical forest)

Afternoon: Development and execution of original research project

Evening: Additional lectures on selected topics of Bahamian ecology and culture (e.g. formation of oolitic sand, the Bahamian sponge industry, etc.) and/or development of digital field guides

Post trip Presentations and Discussions

Day 1 (half day): Student presentations of digital field guides and discussion

Day 2 (half day): Student research symposium: presentation of research projects and discussion

b) Not technology delivered

4) Rationale

a) Purpose and need. This course will provide students with a general education experience that involves linking critical thinking experiences with an enhancement of oral and written communication skills through collaborative background projects and an original research project. Students will become more responsible global citizens through first-hand experience with such conservation issues as anthropogenic destruction of reef ecosystems. Additionally, they will be immersed in the culture of a foreign country for more than 1 week. This course will provide students with an additional general education option for a 4 credit science courses with laboratory. Within the Department of Biological Sciences, many students have an interest in and career aspirations for marine biology and tropical ecology. However, the Department of Biological Sciences currently has no course offerings in marine biology that address this need; this course will help fill that gap.

b) This course will require participation in an original research project and some background in basic zoology principles and animal systematics. Some students on campus may not be Biology majors and yet have the necessary background and initiative that would allow them to succeed in this course. Therefore, we have put “permission of instructor” to allow such students an opportunity to participate. Students will be required to meet with the course instructors prior to gaining permission to enroll in order for the instructors to evaluate whether the student’s background is appropriate. The level of critical thinking, in combination with the specificity of the topic and depth of coverage of material make a 3000-level designation appropriate.

c) This course has no significant overlap with any existing courses. BIO 1200G (General Botany) and BIO 1300G (Animal Diversity) are introductory courses focusing primarily on structure and function of organisms. Furthermore, its study abroad component and the focus on marine and subtropical systems clearly set it apart from BIO 3800 (Ecology), which concentrates more on general principles.

d) *Program Impact:*

i) This course will satisfy 4 s.h. of the Scientific Awareness Segment’s biological sciences requirement and a laboratory requirement. It will be allowed as a Biology Elective for undergraduates in Biological Sciences major

ii) Not a graduate level course

5) Implementation

a) This course will initially be offered by Dr. Eric Bollinger and Dr. Paul Switzer but can be taught by other qualified faculty in the Department of Biological Sciences.

b) *Additional costs:* Because an integral part of this course is the study abroad component, students will be required to pay for travel expenses and applicable fees associated with the course in addition to their regular fees for course credit. In addition, a laboratory fee of \$30 per student will be requested (pending approval from President's Council) to offset necessary expenses for commodities associated with the digital field guide and research project (e.g. batteries, compact discs, and consumable camera accessories such as silicone and memory chips).

c) Text and Supplementary Materials:

[The following books come as a set]

i) Reef Creature Identification: Florida, Caribbean, Bahamas. By Paul Humann and Ned DeLoach.

ii) Reef Fish Identification: Florida, Caribbean, Bahamas. By Paul Humann and Ned DeLoach.

iii) Reef Coral Identification: Florida, Caribbean, Bahamas. By Paul Humann and Ned DeLoach.

6) A community college course will not be judged equivalent to this course.

7) Date approved by the department or school 4-19-06

8) Date approved by the college curriculum committee 4-28-06

9) Date approved by CAA 11-30-06