



Syllabus
Biology 5XX Marine Ecology Capstone
Hybrid-Intersession/Spring 2018

Instructors: Dr. Aaren Freeman & Dr. Beth Christensen

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Office hours:

Meetings:

Course description:

Students will examine topics in marine ecology through independent group research projects on the barrier reef in Belize during intersession, followed by guided reading, presentations and discussion of articles from the primary literature during the spring semester.

Course learning goals

By the end of this course students will be able to:

1. describe ecological principles as they relate to marine systems.
2. interpret how ecological phenomenon play out in tropical marine systems (coral reefs, seagrass beds, mangroves).
3. distinguish between ecological principles using examples of living organisms in marine ecosystems.
4. interpret statistical and graphical analyses used in research studies.

Textbook and other reading materials

1. Prior to the intersession fieldwork students will choose among several research topics and 8-12 reading assignments related to that to that topic. (E.g. (Huston, 1985)(Lesser, 2004))
2. During the spring semester students will receive bi-weekly reading assignments and will be responsible for reading, understanding and discussing these assignments.
3. Twice during the semester each student will be responsible for describing one of the biweekly readings and leading discussion on the paper.
4. Moodle will be used to distribute reading material.

Attendance

Participation in the intersession field work in Belize is mandatory and essential to success in the course. Attendance during the spring semester meetings is compulsory.

NOTE: Valid reasons for missing a compulsory course component are illness and university-sanctioned events (e.g. athletic events). If you know that you are going to miss a class, notify me beforehand. In case of illness, you have to provide me with an official note signed by a health professional.

You should come **prepared** for each lecture/seminar. You read assignments before each lecture/seminar and contribute to the class discussion in a way indicating your comprehension of the material.

Evaluation and course grading

| Source | Points (100 total) |
|--------------------------------------|--------------------|
| Article discussion (15 x 2) | 30 |
| Research presentation | 20 |
| Final paper (outline & bibliography) | 5 |
| Final paper (first draft) | 10 |
| Final paper (final draft) | 20 |
| Participation | 15 |

Article discussion leadership (15 X 2 points): Twice during the semester each student will lead discussion on a paper topic. Some articles have already been suggested in the syllabus. If none are provided students will identify a research ecology article (in Ecology, Ecological Monographs, Ecology Letters, Marine Ecology Progress Series, Oikos, or Journal of Experimental Marine Biology and Ecology) and have it approved by Dr. Freeman. During class the student will briefly introduce the class to individual study (a Powerpoint presentation is not necessary), including ecosystem, organisms, the hypotheses of the study, the methods, results, interpretation and address specific questions generated during discussion.

Research Presentation (20 points): In accordance with the university capstone requirement, each student will give an oral presentation in front of the class. Students will give a 15 minute Powerpoint presentation describing the habitat in which the conducted research, dominant floral/faunal species, types of disturbance, conservation issues, noteworthy research conducted at the site etc.

Final Paper (35 points, including 2 drafts): Each student will write a 15-20 page paper/literature review of a topic in marine ecology. Papers will include evaluation of statistical methods and interpretation in previous research studies, examples of data presented (including graphs), and a 10-15 paper bibliography.

1. Honor Code

There will be zero tolerance on infractions to the honor code. Students will be referred to the Provost's office and will receive a failing grade for the exam or exercise. Adelphi's Student Honor Code (see student handbook): "*...every student is on his or her honor not to cheat, nor to plagiarize, nor to act dishonorably.*"

2. Ferpa

Under the Family Educational Rights and Privacy Act (FERPA), a student's grades or academic record cannot be revealed to anyone outside of university officials without written permission of the student.

3. Special needs

Students with disabilities are encouraged to talk to the professor about accommodations they may need to produce an accessible learning environment.

Cell phone policy:

The use of cellphones or other hand-held communication device when students should be engaged in discussion or lecture, is strictly forbidden. Student will receive one warning

Turnitin:

Adelphi University has a license agreement with Turnitin.com, a service that helps prevent plagiarism from Internet resources. I reserve the right to request an electronic copy of any written assignment submitted in this course for review through Turnitin.com. Please see Adelphi's tips for students on preventing plagiarism and student instructions for Turnitin.com for more information.

Belize Marine Ecology Capstone Schedule - Intersession

| | | |
|------------------|--|--------------|
| January 8, 2018 | PM: transfer to Tobacco Caye, Snorkel training | Tobacco Caye |
| January 9, 2018 | Day trip snorkel mangroves | Tobacco Caye |
| January 10, 2018 | AM: Tobacco cay PM: transfer to Glovers | Glovers Reef |
| January 11, 2018 | Introduction to Glovers, planning experiments | Glovers Reef |
| January 12, 2018 | Half-day trip outside MPA | Glovers Reef |
| January 13, 2018 | Research projects | Glovers Reef |
| January 14, 2018 | Research projects, Half-day trip outside MPA | Glovers Reef |
| January 15, 2018 | Research projects | Glovers Reef |
| January 16, 2018 | Research projects | Glovers Reef |
| January 17, 2018 | Research projects | Glovers Reef |
| January 18, 2018 | Travel day: Glovers to Belize City to NYC | |
| | January 23, 2018 Spring Classes begin | |

Contact hours: (10 days x 1.5 hr lecture/day=15) + (9 days x 5 lab hrs/day=45)

Belize Marine Ecology Capstone Schedule - Spring

| Week of: | Research Topic/presentations | Paper Presentations |
|-------------|--|---|
| January 23 | Statistics/data planning | none |
| January 30 | Methods & Statistics | Competition/ Predation |
| February 13 | Methods & Statistics | Facilitation/Mutualism |
| February 27 | Methods & Statistics | Bottom-up/top-down Trophic cascades |
| March 13 | Spring break | |
| March 20 | Paper introduction workshop | Metapopulations Island Biogeography |
| April 3 | Research Poster presentations/critique | Latitudinal gradients Metabolic theory |
| April 17 | First draft final paper workshop | MPAs |
| May 1 | TBD | Diversity, Stability and Resilience |
| Exam week | Exam | |

Contact hours: 10 x 3 hrs =30

Partial Bibliography:

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