

## **IB 496 Course Syllabus: Biological Field Research**

### ***Instructors:***

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### ***Course meeting times and location:***

- a) Meet weekly on Wednesdays, 5:00-5:50pm, in 2004 NHB, January 22 – March 11
- b) Travel to Archbold Biological Station in Venus, Florida, March 14 – 22

### ***Student learning objectives:***

Upon completion of the course, students will be able to...

- a) Understand the concept of study design for biological field research, specifically: selecting field sites, experimental design, data collection and analysis, and presentation of results.
- b) Appreciate the challenges and the opportunities that exist with biological field research.
- c) Design, perform and analyze a novel research project.
- d) Present their findings and relate their results to the existing scientific literature.
- e) Propose additional biological field research questions for future study.

### ***Course format:***

During the on-campus portion of the course, we will seek to accomplish the following:

- a) Introduce students to the diversity of approaches used in biological field research.
- b) Learn about the ecosystems of southern Florida as a natural laboratory to perform a field research study to address an unanswered question in biology.
- c) Explore the complex land-use history and land management decisions of the region and how this legacy continues to influence natural outcomes.
- d) In collaboration with class members, develop and conduct original research within the context of southern Florida ecosystems for the in-field portion of the course. Students will conduct a literature review and develop project design during the on-campus portion of the course.

During the in-field portion of the course, we will seek to accomplish the following:

- a) Visit sites around southern Florida that are representative of different ecosystems and potential research questions for biological field research.
- b) Interact with various instructors, researchers and community members in the course of learning about the biology of the region.
- c) Conduct an independent research project focusing on an aspect of the biology of the region near Archbold Biological Station.
- d) Fully integrate the knowledge, interests and perspectives of class participants to enhance the learning experiences of all students.

### ***Student evaluation will be based upon:***

1. Participation in weekly discussions and activities during the on-campus portion of the course.
2. Research and development of a field project during the on-campus portion of the course.
3. Participation and engagement in guest lectures and lectures from course instructors during the on-campus and in-field portions of the course.
4. Performance of a field study addressing a question in biological field research during the in-field portion of the course.
5. Presentation of the findings from the field study at the end of the in-field portion of the course.

***Course Policies:***

Students will be expected to interact maturely and responsibly with their course instructors, fellow classmates, and guest speakers during the on-campus and in-field portions of the course. Regular attendance of and participation in the on-campus portion of the seminar is mandatory in order to participate in the in-field component of the course. Students must comply with instructed safety precautions during the in-field portion of the course and treat the facilities visited with care and respect. Students are prohibited from engaging in activities that endanger themselves or their classmates while traveling, including drug use and excessive alcohol consumption. Each individual is responsible for ensuring not only their own safety, but that of their classmates.

***Disability Accommodations:***

Students with disabilities who require assistance to participate in this class are asked to discuss any requested accommodations with the course instructor as soon as possible.

***Syllabus for the on-campus portion of course:***

<b><i>Date</i></b>	<b><i>Topic</i></b>	<b><i>Assigned Reading</i></b>
1/22	-Welcome and introductions -Course overview	None
1/29	-“Biological field research” -Discussion of assigned reading	Swain 1998 – Archbold Biological Station and the MacArthur Agro-Ecology Research Center
2/5	-“Observational field research” -Discussion of assigned reading	Stallcup & Woolfenden 1978 – Family status and contributions to breeding by Florida scrub jays
2/12	-“Experimental field research” -Discussion of assigned reading	Ashton et al. 2008 – Gopher tortoise abundance and distribution after prescribed fire reintroduction
2/19	-“Agroecology” -Discussion of assigned reading	Tucker et al. 2017 – Preparing Florida pasture for grassland restoration: Seedling establishment after tilling
2/26	-“Kissimmee River restoration” -Discussion of assigned reading	Toth et al. 1998 – Hydrologic manipulations of the channelized Kissimmee River
3/4	-“Mangrove Cuckoos of Ding Darling” -Discussion of assigned reading	Lloyd 2017 – Movements and use of space by Mangrove Cuckoos in Florida, USA
3/11	-“Florida manatee conservation” -Discussion of assigned reading	Martin et al. 2015 – Combining information for monitoring at large scales: First statewide abundance estimate of the Florida manatee

***Syllabus for the field portion of course:***

<b><i>Date</i></b>	<b><i>Class Activity</i></b>
3/14	7am – Depart Morrill Hall 4pm-6pm – Tour Tennessee Aquarium
3/15	Arrive Archbold
3/16	9am – Archbold Tour 1pm – Field research at Archbold 4pm-5pm – Free time at Lake Annie 7pm-8pm – Experimental design, data entry and data analysis (as needed)
3/17	8am-4pm – Field research at Archbold 4pm-5pm – Free time at Lake Annie 7pm-8pm – Experimental design, data entry and data analysis (as needed)
3/18	8am-3:30pm – Tour of the Kissimmee River restoration project with Riverwoods Field Lab 4pm-5pm – Free time at Lake Annie 7pm-8pm – Experimental design, data entry and data analysis (as needed)
3/19	8am-4pm – Field research at Archbold 4pm-5pm – Free time at Lake Annie 7pm-8pm – Experimental design, data entry and data analysis (as needed)
3/20	10am-11:30am – Kayak trail tour of Tarpon Bay, Ding Darling National Wildlife Refuge 1pm-4pm – Half day tour of Cayo Costa State Park
3/21	7am – Depart Archbold 12pm-2pm – Tour Manatee Springs State Park
3/22	Arrive Illinois