

Invasion Ecology of Aquatic Animals
FAS 4932 (section 8143) and FAS 6932 (Section 6725)

Fall 2006
T & R Periods 8-9 (3-4:55 pm)
220 Rinker Hall
3 Credits

Course Instructor:

Dr. Jeff Hill

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Office hours by appointment. Note that the instructor is located about 2 hrs from main campus and will be most available for discussion in Gainesville before and after class.

Course Description:

This course will provide a comprehensive overview of the field of invasion ecology and will emphasize aspects related to aquatic animals. Through lectures, readings, discussions, and invited expert speakers, students will be presented the ecological concepts and debates underlying this developing field; the biology and life history of nonnative aquatic animals, including characteristics of successful invaders (emphasis on Florida); risk analysis methodology; and the conservation and regulatory implications of nonnative aquatic species.

Prerequisites:

Advanced undergraduate or graduate standing. Given the broad scope of the field of invasion ecology, the course will cover diverse topics, each requiring a base of knowledge for the course to build upon. Students should have prior coursework in biology and have an understanding of basic ecological concepts.

Objectives:

The objectives of this course are 1) to provide students with an understanding of the field of invasion ecology, including representative organisms, ecological theory, management, and regulation, 2) to introduce students to the classical and contemporary literature of the field, 3) to

enhance the ability of students to critically evaluate literature as well as logical arguments related to invasion ecology, and 4) to provide students with experience in scientific writing.

Expected Outcomes:

After taking this course, students will be expected to have a strong familiarity with the concepts associated with species invasions; to be able to use basic risk assessment methodology; to think critically to evaluate literature and arguments, especially when faced with uncertainty and scientific disagreement; to more effectively communicate orally in small groups of peers and in scientific writing; to develop an appreciation for the complex relationship between science, management, and regulation; and to work effectively with colleagues.

Course Projects:

Projects **MUST** be turned into the instructor before class ends on the due date. There will be a point penalty for late projects. Make prior arrangements and expect to turn projects in early if there are conflicts with the schedule.

Species Synopsis

All students will choose a non-native aquatic species in Florida and write a brief species synopsis. The species may be freshwater, estuarine, or marine and must be a non-plant taxon. Species will be chosen in consultation with the course instructor to prevent student overlap. A detailed outline of the project requirements will be provided during class. In brief, students will conduct literature and internet searches to obtain information on the occurrence, life history, ecology, effects, and regulatory status of the species and write a fact sheet summarizing this information and pointing out gaps in knowledge.

Risk Assessment

Students will participate in teams to conduct a risk assessment using the RAM Committee Generic Analysis method on a select group from the class species synopses. Teams will choose a person to present their work and to lead the discussion of their risk assessment during class. More detailed instructions will be provided during class.

Topic Review

All **graduate** students will choose an ecological topic pertinent to invasion ecology (e.g., relation of community diversity and invasibility) and write a detailed literature review of the subject. This project will provide experience in finding and obtaining literature, assimilating and synthesizing technical information, and producing a detailed, written product. More detailed instructions will be provided during class.

Course Outline:

Topics schedule is tentative based on class progress and speaker availability.

WEEK	DATE	TOPIC	ASSIGNMENTS
1	Aug 24	Introduction	
2	Aug 29	Classic and Recent Case Studies	
	Aug 31	Case Study: Florida	
3	Sept 5	Case Study: Florida	
	Sept 7	Case Study: Florida	
4	Sept 12	AFS Meeting—No Class	
	Sept 14	AFS Meeting—No Class	
5	Sept 19	Biogeography; Invasion Process	
	Sept 21	Invasion Process	Species Profiles Due
6	Sept 26	Invasion Process	
	Sept 28	Invasion Process	
7	Oct 3	Invasion Process	
	Oct 5	Effects of Non-native Species	
8	Oct 10	Effects of Non-native Species	
	Oct 12	Effects of Non-native Species	
9	Oct 17	Discussion on Effects Debate	
	Oct 19	Prediction; Risk Assessment	Exam 1
10	Oct 24	Ecological Theory	
	Oct 26	Competition	
11	Oct 31	Predation	
	Nov 2	Community and Indirect Effects	
12	Nov 7	Pathogens	
	Nov 9	Genetics	
13	Nov 14	Risk Assessment	Risk Assessment Presentations
	Nov 16	Management	
14	Nov 21	Management	
	Nov 23	Thanksgiving—No Class	
15	Nov 28	Management; Conservation	
	Nov 30	Regulation	
16	Dec 5	Information Sources	Topic Reviews Due
	Dec 7	Reading Day—No Class	
17	Dec 14		Final Exam—0730-0930

Grading:

There will be two exams (a midterm and final). These will cover all information in lectures, readings, and from invited speakers. Species profiles and risk assessments (except what is covered in lecture), and topic reviews will not be covered on exams.

<i>Undergraduate</i>		<i>Graduate</i>	
Exam 1	25%	Exam 1	20%
Exam 2	25%	Exam 2	20%
Species Profile	20%	Species Profile	15%
Risk Assessment	20%	Risk Assessment	15%
Discussion Participation	10%	Discussion Participation	10%
		Topic Review	20%

Grading Scale:

A	90-100%
B+	85-89
B	80-84
C+	75-79
C	70-74
D+	65-69
D	60-64
E	<60%

Textbooks and Reference Material:

There are no required texts for the course. Various handouts will be provided by the instructor and guest speakers. In addition, students will use the library and computers to obtain pertinent literature for class discussion and projects.

The Student Honor Code - 6C1-4.017

Preamble: In adopting this Honor Code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the University community. Students who enroll at the University commit to holding themselves and their peers to the high standard of honor required by the Honor Code. Any individual who becomes aware of a violation of the Honor Code is bound by honor to take corrective action. Student and faculty support are crucial to the success of the Honor Code. The quality of a University of Florida education is dependent upon the community acceptance and enforcement of the Honor Code.

The Honor Code: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

"On my honor, I have neither given nor received unauthorized aid in doing this assignment."

(1) All students are required to abide by the Student Honor Code.

(2) The conduct set forth hereinafter constitutes a violation of the Student Conduct Code. Those adjudged to have committed such conduct shall be subject to the sanctions provided in Rule 6C1-4.016, F.A.C.

Reasonable Accommodation Based on Disability

The Americans with Disabilities Act of 1990 (ADA) makes it unlawful to discriminate in employment against a qualified individual with a disability. To be protected under the ADA, an individual must have, have a record of, or be regarded as having a substantial (as opposed to a minor) impairment. A substantial impairment is one that significantly limits or restricts a major life activity.

This form is designed to assist employees in requesting a reasonable accommodation. What is a reasonable accommodation? A reasonable accommodation is any change or adjustment to a job or work environment that does not cause an undue hardship on the department or unit and which permits a qualified applicant or employee with a disability to participate in the job application process, to perform the essential functions of a job, or to enjoy benefits and privileges of employment equal to those enjoyed by employees without disabilities. For example, a reasonable accommodation may include providing or modifying equipment or devices, job restructuring, allowing part-time or modified work schedules, reassigning an individual, adjusting or modifying examinations, modifying training materials or policies, providing readers and interpreters or making the workplace readily accessible to and usable by people with disabilities.

Counseling Center

301 Peabody Hall
(352) 392-1575
www.counsel.ufl.edu/

The Counseling Center provides counseling services to currently enrolled University of Florida undergraduate and graduate students. All of the Center's programs and services are based upon the proposition that a student's success in college is directly related to his or her general development as a human being. The Center offers brief counseling to help students develop the personal awareness and skills necessary to overcome problems and to grow in ways that will allow them to take advantage of the educational opportunities at the university.