
Description An introduction to biological invasions including plants, animals, and microbes. Biology and ecology of invasive species and exploration of invaded ecosystems. Role of humans in invasions, impacts of invasions on communities and ecosystems, management of invaded natural areas. Offered every fall term.

Biological invasions can have significant ecological effects on communities and ecosystems. Monitoring, prevention, management, and impacts of invasions are a significant drain on the global economy. In this course, we provide a broad overview of non-native invaders with emphasis on invasive species in Florida. We will cover the stages of the invasion process, mechanisms underlying invasions, characteristics of communities vulnerable to invasions, impacts of invasions, and management approaches.

Time and Location 100% online

Instructors	S. Luke Flory Associate Professor Agronomy Department, IFAS University of Florida Gainesville, FL 32611 Email: flory@ufl.edu	Office location: McCarty B 3127A Office hours: by appointment Cell: 352-231-2376 Office: 352-294-1581 Web: florylab.com Twitter: @lflory
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Prerequisites None, but some biology or ecology would be helpful. Appropriate for majors or non-majors.

Textbook None required

Additional Reading List Davis, Mark A., et al. "Don't judge species on their origins." *Nature* 474.735 (2011): 153.
Simberloff, Daniel, et al. "Non-natives: 141 scientists object." *Nature* 475.7354 (2011).
Thompson, Helen. "Plant science: the chestnut resurrection." *Nature News* 490.7418 (2012): 22.
Quinn, Lauren D., et al. "Bioenergy feedstocks at low risk for invasion in the USA: a "white list" approach." *BioEnergy Research* 8.2 (2015): 471-481.

***Other reading assignments will be added to this list throughout the semester and will be available via Canvas.

Course Objectives	Upon completion of this course, students should be able to: <ol style="list-style-type: none"> 1. Define invasive species and provide characteristics of common invasive species and invaded habitats. 2. Describe the stages of the invasion process. 3. Summarize the general hypotheses to explain what causes invasions. 4. Explain the effects of invasions on communities and ecosystems. 5. List possible management strategies for invasions and their pros and cons. 6. Name and describe some of the most ecologically damaging invasive species.
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Grades Your grade will be based on essays, presentations on an invasive species and a current event, two exams, and participation in discussion.

Task	Description	Points	% of grade
Essays	Three 1-page essays on specific topics (25 pts each)	75	20
Presentation	Group presentation on an invasive species of interest	50	13
Current event	Short (2 min) presentation on invasive species in the news	10	2.5
1 st exam	Covers the first half of the course	100	27
2 nd exam	Comprehensive – may include general material from the entire semester	100	27
Participation	Contribution to online discussion board	40	10.5
Total		375	100

Grades will be assigned using the following scale:

94.0-100 = A; 90-93.9 = A-; 87.0-89.9 = B+; 83.0-86.9 = B; 80.0-82.9 = B-;
77.0-79.9 = C+; 73.0-76.9 = C; 70.0-72.9 = C-; 67.0-69.9 = D+; 63.0-66.9 = D;
60.0-62.9 = D-; < 60 = E.

Assignments, Exams, and Participation

*Refer to full assignment descriptions for due dates and grading rubrics.

Essays	Three one-page essays will be due throughout the semester. Essays will be graded on organization, grammar, content, and clarity. The essay topics include: 1) defining biodiversity, its importance, and how it varies by regional scale, 2) the benefits and risks of non-native species, and 3) the benefits and challenges of biocontrol.
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Presentations	In groups of 2-4, students will select an invasive species and create and deliver a presentation (lasting 12 minutes or less) that describes the species, origin and invasive range, invasion process, and management options. The presentation should also include a short quiz, and an individual worksheet should be completed demonstrating knowledge of the invasion process for the species.
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Current Event	Once during the semester students will share with the class a current event related to invasive species. The objective of this assignment is to encourage exploration of current events in the news and on social media and to recognize the frequency that invasive species, and the problems they cause, are
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highlighted by news media. Current events will be graded as complete or incomplete.

Exams	Two exams will be administered during the course, one at the mid-point and one at the end of the semester. Exams will cover concepts presented during lecture and discussions, but <u>not</u> information from student presentations on individual species. Some exam questions will be drawn from readings and videos, in addition to lecture content.
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Participation	Student participation in class is worth 40 points (10.5% of course grade). 10 points will be based on participation in group presentation quizzes. The remainder of the participation points will be based on asking and responding to questions and comments during online discussions. Each week, students are expected to ask one question or more, or make one or more comments, and respond to at least two questions or comments from other students.
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Other information

Privacy issues	Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.
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Feedback	Feedback will be given in the form of comments on completed assignments and exam and assignment grades. Luke can be contacted at any time via email or in person to discuss assignments or activities in the class. Gio is also available to assist students with their essay drafts before each essay assignment is due either in person or via email. Questions regarding class content are always welcome and are encouraged.
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Missed Assignments	Please contact the course instructors as soon as possible if you do not expect to complete assignments on time or if you need to reschedule an exam so that we can agree on revised due date or exam date. Assignment extensions and rescheduling of exams will be determined on a case-by-case basis due to medical, religious, or family-related reasons.
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Grading policy	Information on current UF grading policies for assigning grade points can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx
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Academic Honesty	In 1995 the UF student body enacted an honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at
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the university, they commit themselves to the standard drafted and enacted by students.

The Honor Pledge: 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, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

The Honor Code (<https://sccr.dso.ufl.edu/policies/studenthonor-code-student-conduct-code/>) specifies several behaviors that are in violation of this code and the possible sanctions.

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean, Student Honor Council, or Student Conduct and Conflict Resolution in the Dean of Students Office.

(Source: 2011-2012 Undergraduate Catalog)

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

This policy will always be vigorously upheld in this course. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources Resources are available on-campus for students having personal problems or Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

1. *University Counseling & Wellness Center*, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/, Counseling Services, Groups and Workshops, Outreach and Consultation, Self-Help Library, Training Programs, Community Provider Database
2. *Career Resource Center*, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Evaluations Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary 5 results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Sexual Discrimination, Harassment, Assault, or Violence:

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the Office of Title IX Compliance, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Students with Disabilities The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/