AGR 4932: Plant Ecology in the Anthropocene

I. General Information

Class Meetings

- Mon.-Sat. for length of program
- 100% in-person in Costa Rica
- Activity based and times vary

Instructors

- William M. Hammond, PhD
- 2083 McCarty Hall B
- Office Hours: As needed throughout the course
- williamhammond@ufl.edu; 405-471-7203 (cell/WhatsApp)

- Rosalie Koenig, PhD
- G052A McCarty Hall D
- Office Hours: As needed throughout the course
- rlkoenig@ufl.edu; 352-273-3495 (Office)

- Emily E. Perry, PhD Student
- Course TA
- emily.perry@ufl.edu

Course Description

Plant Ecology in the Anthropocene course overview and purpose:

In this course you will create conceptual models for connections between plants and people in the Anthropocene—our present human-induced geologic time period. Through course-embedded research experiences, you will design and conduct a research project, and communicate your original scientific findings in plant ecology to your peers in a formal scientific presentation.

Learning objectives

1. Students will be able to identify causes and evidence for the Anthropocene.
2. Students will recognize key concepts in plant ecology, climatology, and plant-human-climate interactions.

3. Students will participate in the scientific research project, developing research project proposals, collecting and analyzing data, and communicating their findings through research presentations.

Required Readings and Works

The workbook for this course is required reading material. Supplemental reading may be suggested throughout the workbook for students curious to learn more, but is not required.

II. Graded Work

Description of Graded Work

Your grade in this course will be based on the following assessments.

Class Workbook: Students are expected to be prepared for activities, having reading required materials ahead of time so they can participate. The program workbook will have designated sections for each of the two courses that are part of the program in Costa Rica (this course, and AGR4932: Human Dimensions of Tropical Ecological Systems). You will be evaluated separately for the content associated with each course. The instructors will evaluate students on the content of the workbook which will include in-person activities (data collection, debates, discussions, participation etc.), content questions and reflections. Through the course students will write meaningful reflections in their course workbook based on prompts that reinforce some of the key topics that we will be exploring. The reflections will include some narrative on how you have changed, developed, or grown from your experience or interaction with the subject matter, ideas, or topic. The workbook sections for this course are worth 60 points.

Research Project Proposal: Research projects will begin in the third week of the course, when we arrive at CATIE in Turrialba. In assigned groups, students will prepare a brief research project proposal, to include a scientific question, a testable hypothesis, and an approach (including methods to collect and analyze data) for the group's research project. The project proposal is worth 15 points. A rubric will be handed out prior to the start of research projects at CATIE.

Research Project Presentation: In groups, students will present virtual "poster presentations" for their proposed and executed research projects. The instructors will evaluate students on the content of the research project presentation, the creativity/design of their posters, and the clarity of their communication. The research project presentation is worth 25 points. A rubric will be handed out prior to the start of research projects at CATIE.

Graded Work Summary:

Class Workbook	60 points
Research Project Proposal	15 points
Research project presentation	25 points
Total	100 points

Grading Scale

For information on how UF assigns grade points, visit: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/. Percentages will be determined by adding up the total number of points earned on all graded work plus any extra credit points earned in the class and dividing by the total number of possible points (650 points) on all graded assignments.

A	94 – 100%		C	74 – 76.9%
A-	90 – 93.9%		C-	70 – 73.9%
B+	87 – 90.9%		D+	67 – 69.9%
B	84 – 86.9%		D	64 – 66.9%
B-	80 – 83.9%		D-	60 – 63.9%
C+	77 – 79.9%		E	<60

III. Course Schedule and Modules

Timeline:	Palo Verde	Las Cruces	La Selva	CATIE	Palo Verde	Liberia / San Jose

	Date	Day#	Module Number / Location	Activity
Su	4	1	Liberia – Arrivals	
M	5	2	Drive to Palo Verde Module 1: Climate & Biomes	Station tour, Plants in the Anthropocene Lecture, Hiking
Tu	6	3	Module 1: Climate & Biomes	Finish Climates & Biomes
W	7	4	Volcan Irazu Tour (AM) / National Museum (PM)	
Th	8	5	Drive to Las Cruces	
F	9	6	Module 2: Plant Evolution	"What is a plant?" in the botanic garden
Sa	10	7	Module 3: Plant Form	Microscopes, anatomical diversity
Su	11	8	**DAY OFF**	**DAY OFF**
M	12	9	Module 4: Plant Function	Canopy tower microenvironment gradients. Functional trait measurement methods.
Tu	13	10	Module 5: Succession	FIELD DAY: Forest restoration plots. Data Science (Canopy Tower Analysis)
W	14	11		FIELD DAY: Secondary forest hike
Th	15	12		FIELD DAY: Primary forest hike at Las Alturas
F	16	13	Drive to CATIE / Research Projects Overview	

Sa	17	14	Module 6: Research Projects	Research Projects Proposal Development
Su	18	15	**DAY OFF**	**DAY OFF**
M	19	16	Module 6: Research Projects	Research Proposals Due by lunch / Feedback in PM
Tu	20	17		[AM] Research project data collection
W	21	18		[AM] Research project data collection
Th	22	19		Research Project Data Analysis
F	23	20		Research Project Data Analysis
Sa	24	21		Research Project Presentations
Su	25	22	Drive to La Selva	
M	26	23	Module 7: Species Distributions	Species Distributions Activity in Workbook Station Tour
Tu	27	24		Arboretum activity: tree measurement [AM] Arboretum data science [PM] Night tour
W	28	25	Drive to Hot Springs / **DAY OFF**	
Th	29	26	Drive to Liberia / Debrief [PM]	
F	30	27	**Departure**	

IV. Student Learning Outcomes (SLOs)

At the end of this course, students will be expected to have achieved learning outcomes as follows:

Content: Students are able to explain important concepts in plant ecology in the Anthropocene, including but not limited to: plant evolution, plant structure, plant function, succession, niche concepts, and climate science. Students will assess collected evidence through data science workshops. (Assessed through workbook completion, and group research project presentations).

Critical thinking: Students are able to analyze data from multiple perspectives and evaluate the practices and policies implemented to address environmental and climate concerns in Costa Rica

Communication: Students are able to communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to environmental and agricultural practices that address climate change impacts. (Assessed in class participation, workbook activities, and group research project presentations).

Collaboration: Students are able to work collaboratively with others and be an effective team member. (Assessed in the in class group activities, including group research projects)

Connection: Students are able to assess the relevance of climate change on managed and natural systems to their personal and professional development and the greater society. (Assessed in reflection essays)

V. Learning Experiences

1. Details of Experiential Learning Component

Students will have the opportunity to engage in experiential learning through participating in all activities. Each experience will explore an aspect of the human influence in natural and managed systems. Students will engage in observational learning, a hands-on activity, discussion and reflection exercises. The location, date and description of each activity will be provided to the students but we may need to modify them based on weather conditions on site.

2. Details of Self-Reflection Component

Self-reflection activities will be part of the course modules. For example, class participation will include activities that require you to work individually or in teams to learn research methods, collect data, and participate in activities in support of developing new ways of thinking about a particular course topic. Reflection prompts in your workbook are related to the course content and experiences and help develop your analytical skills. They provide an opportunity for you to explore what you learned about a topic and express what, how and why you think in a particular way. You will use your personal experiences, observations and content knowledge to consider new ideas and shape (or re-shape) your way of thinking.

VI. Required Policies

Attendance Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. 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." The Honor Code (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: http://www.counseling.ufl.edu/ , 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at http://writing.ufl.edu/writing-studio/ or in 2215 Turlington Hall for one-on-one consultations and workshops.

In-Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.