

# FOR6170 Tropical Forest Ecology

## 1 Course Overview

### Course description:

- This course is designed to allow students to study in-depth the ecology of tropical forests. We will examine foundational concepts regarding tropical forests: including, but not limited to, tropical forest structure, dynamics and diversity, plant-animal interactions and tropical forest biogeochemistry. Additionally, we will focus on understanding ecological issues underlying tropical forest management, conservation and other applied issues. We will survey current frontiers and controversies in the field.
- 3 Credits
- Spring semester 2024
- Format: face to face
- <http://elearning.ufl.edu/>

**Prerequisites:** a previous ecology course at the undergraduate or graduate level

**Instructor:** Stephanie Bohlman

- Contact instructions – [sbohlman@ufl.edu](mailto:sbohlman@ufl.edu)
- Office hours: Thursdays 10:45-11:45 Newins Zeigler 349
- Phone: 352-846-3503

## 2 Learning Outcomes

By the end of this course, each student will be able to:

- Explain foundational concepts regarding tropical forest structure, dynamics, composition and diversity
- Understand and analyze current research on tropical forest ecology, conservation and management as found in recent issues of top science journals, such as Nature, Science and PNAS and covered in the popular media
- Apply forest ecology concepts to conservation and management issues in tropical forests
- Read scientific literature more constructively and critically
- Relate course content to their own research and career interests and goals

## 3 Course Logistics

Students may access assignments, readings, and supporting materials through the course Canvas site as they become available. The course is face to face but occasionally may have online sessions.

### Technology Requirements:

- A computer or mobile device with high-speed internet connection.
- A webcam, headset and/or microphone, and speakers.
- Latest version of web browser. Canvas supports only the two most recent versions of any given browser.
- Installation of proctoring software may be required and will be provided if so.

**Synchronous online sessions may be recorded.** By sharing your video, screen, or audio during any synchronous online class sessions, you are consenting to being recorded for the benefit of students who cannot attend live as well as for class review during the current semester. If you have special circumstances or concerns about privacy, it is your responsibility to discuss it with your instructor.

### 3.1 Description of Assessments & Activities

**Weekly reading preparation: 20%.** Each week, we will read and discuss primary literature, supplemented by general audience articles. Each week, students will be provided guiding questions that need to be answered before class to prepare for discussing the literature in class.

**Weekly discussion: 20%.** Based on their weekly reading preparation, each student is expected to participate in class discussion each week.

**Student-led class: 20%.** Each student will lead a class based on a topic that they choose in consultation with the instructor. Students will choose 1-3 papers for the class to read, prepare guiding questions for the weekly reading preparation, prepare a presentation providing background and context on the topic, then lead the in-class discussion.

**Semester Project 40%** Students will produce a written product based on how the course content intersects with their research or career interests and goals. In consultation with the instructor, the student will choose the semester project, such as a proposal, draft manuscript, literature review, or popular science article. In addition to the final submission, students will be graded on steps toward the final submission during the semester, including a project proposal, literature review and update, and draft submission. For the draft submission, students will receive a review with constructive feedback from two other students in the class and the instructor.

### 3.2 Grades & Grading Scale

Weekly reading preparation	20%
Weekly discussion participation	20%
Lead one discussion	20%
Semester project	40%
<b>TOTAL</b>	<b>100 %</b>

For information on current UF policies for assigning grade points, see  
Ugrad <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>  
Grad <https://catalog.ufl.edu/graduate/regulations/#text>

Grading Scale (%)	
A	100% to 94%
A-	93.99% to 90%
B+	89.99% to 87%
B	86.99% to 84%
B-	83.99% to 80%
C+	79.99% to 77%
C	76.99% to 74%
C-	73.99% to 70%
D+	69.99% to 67%
D	66.99% to 64%
D-	63.99% to 61%
E	60.99% to 0%

## 4 Learning Content

<b>Schedule</b>			
<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Assignment Due</b>
<b>1</b>	Jan 9/11	Introduction to Course and Participants, Course Planning, Global Tropical Forests	Reading prep
<b>2</b>	Jan 16/18	Overview of People and Tropical Forests, Diversity	Reading prep: Choose topic for student-led class and project
<b>3</b>	Jan 23/25	Plant and Animal Diversity	Reading prep
<b>4</b>	Jan 30/Feb 1	Evolution and Maintenance of Diversity	Reading prep; Submit project proposal
<b>5</b>	Feb 6/8	Forest Structure and Carbon	Reading prep; Feedback on proposal
<b>6</b>	Feb 13/15	Carbon Cycling and Global Change	Reading prep
<b>7</b>	Feb 20/22	Deforestation and Degradation	Reading prep
<b>8</b>	Feb 27/29	Student Project Updates	Reading prep: Project updates
<b>9</b>	Mar 5/7	Spring Break	Reading prep
<b>10</b>	Mar 12/14	TBD	Reading prep
<b>11</b>	Mar 19/21	Reforestation and Plantations	Reading prep
<b>12</b>	Mar 26/28	Diversity-Productivity, Climate Change	Reading prep; Draft project submission
<b>13</b>	Apr 2/4	Impacts of warming, drought, extreme weather	Reading prep

14	Apr 9/11	Fire; Local, Regional, Global Interactions with Hydrology	Reading prep; Peer and instructor feedback on draft
15	Apr 16/18	Tipping Points, Peatlands	Reading prep
16	Apr 23/25	Protected Areas/Community Management	Reading prep: Final project submission

## 5 Policies and Requirements

This course plan and syllabus are subject to change in response to student and instructor needs. Any changes will be clearly communicated in advance through Canvas.

### 5.1 Attendance, Late Submissions & Make-up Requests

Students need to communicate with me as early as possible regarding classes they are going to miss. For missed in-class literature discussions, students will need to write a summary of the assigned reading material. Make-up assignments will be due a week after the class discussion took place unless other arrangements with the instructor have been made.

Unless previously arranged with the professor in writing, 10% per 24 hours will be deducted from assignments turned in late.

It is the responsibility of the student to access materials and readings and to maintain satisfactory progress in the course. Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

### 5.2 Communication Courtesy and Professionalism

Just as in any professional environment, meaningful and constructive dialogue is expected in this class and requires mutual respect, willingness to listen, and tolerance of opposing points of view. **Respect for individual differences and alternative viewpoints will be maintained in this class at all times.** All members of the class are expected to follow rules of common courtesy, decency, and civility in all interactions. Failure to do so will not be tolerated and may result in loss of participation points. A willingness to contribute your opinion and viewpoint will be fostered and expected.

### 5.3 Semester Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning.

**At approximately the mid-point of the semester**, the School of Forest, Fisheries, & Geomatics Sciences will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required but encouraged. This is not the UF Faculty Evaluation!

**At the end of the semester**, 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/>.

### 5.4 Academic Honesty Policy

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following 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."*

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct or appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated.

Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

### 5.5 Inclusive Learning Environment

This course embraces the University of Florida's Non-Discrimination Policy, which reads,

*The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act.*

If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see the instructor or refer to the Office of Multicultural & Diversity Affairs website: <http://multicultural.ufl.edu>.

### 5.6 Services for 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. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, [disability.ufl.edu](http://disability.ufl.edu)

## 5.7 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.

# 6 Campus Helping Resources

For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu) | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFFGS Academic Hub <https://ufl.instructure.com/courses/303721>

## 6.1 Student Life, Wellness, and Counseling Help

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.

- Counseling and Wellness resources <http://www.counseling.ufl.edu/cwc/>
- U Matter, We Care <http://www.umatter.ufl.edu/>
- Career Connections Center <http://career.ufl.edu/>
- Other resources are available at <http://www.distance.ufl.edu/getting-help> for online students.

## 6.2 Student Complaint Process

The School of Forest, Fisheries, & Geomatics Sciences cares about your experience and we will make every effort to address course concerns. If you have a more urgent concern, your first point of contact should be the Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to UF administration:

- <https://distance.ufl.edu/getting-help/>
- <https://registrar.ufl.edu/complaint.html>

## Reading List (example list; exact reading will be given each week)

Corlett, R.T. and Primack, R.B., 2006. Tropical rainforests and the need for cross-continental comparisons. *Trends in Ecology & Evolution*, 21(2), pp.104-110.

Blundo, C., Carilla, J., Grau, R., Malizia, A., Malizia, L., Osinaga-Acosta, O., Bird, M., Bradford, M., Catchpole, D., Ford, A. and Graham, A., 2021. Taking the pulse of Earth's tropical forests using networks of highly distributed plots. *Biological Conservation*, 260, p.108849.

Smith, C., Baker, J.C.A. and Spracklen, D.V., 2023. Tropical deforestation causes large reductions in observed precipitation. *Nature*, 615(7951), pp.270-275.

Doughty, C.E., Keany, J.M., Wiebe, B.C., Rey-Sanchez, C., Carter, K.R., Middleby, K.B., Cheesman, A.W., Goulden, M.L., da Rocha, H.R., Miller, S.D. and Malhi, Y., 2023. Tropical forests are approaching critical temperature thresholds. *Nature*, 621(7977), pp.105-111.

Heinrich, V.H., Vancutsem, C., Dalagnol, R., Rosan, T.M., Fawcett, D., Silva-Junior, C.H., Cassol, H.L., Achard, F., Jucker, T., Silva, C.A. and House, J., 2023. The carbon sink of secondary and degraded humid tropical forests. *Nature*, 615(7952), pp.436-442.

Grossman, D., 2023. 'We are killing this ecosystem': the scientists tracking the Amazon's fading health. *Nature*, 620(7975), pp.712-716.

Kalyuzhny, M., Lake, J.K., Wright, S.J. and Ostling, A.M., 2023. Pervasive within-species spatial repulsion among adult tropical trees. *Science*, 381(6657), pp.563-568.

Pratzer, M., Fernández-Llamazares, Á., Meyfroidt, P., Krueger, T., Baumann, M., Garnett, S.T. and Kuemmerle, T., 2023. Agricultural intensification, Indigenous stewardship and land sparing in tropical dry forests. *Nature Sustainability*, pp.1-12

Brodie, J.F., Mohd-Azlan, J., Chen, C., Wearn, O.R., Deith, M.C., Ball, J.G., Slade, E.M., Burslem, D.F., Teoh, S.W., Williams, P.J. and Nguyen, A., 2023. Landscape-scale benefits of protected areas for tropical biodiversity. *Nature*, 620(7975), pp.807-812.

Fischer, H.W., Chhatre, A., Duddu, A., Pradhan, N. and Agrawal, A., 2023. Community forest governance and synergies among carbon, biodiversity and livelihoods. *Nature Climate Change*, pp.1-8.

Roberts, P., Kaplan, J.O., Findley, D.M., Hamilton, R., Caetano-Andrade, V.L., Amano, N., Kay, A.U., Renn, J. and Winkelmann, R., 2023. Mapping our reliance on the tropics can reveal the roots of the Anthropocene. *Nature Ecology & Evolution*, 7(5), pp.632-636.