LAS 6938 – Social-Ecological Tipping Points in Amazonia

Spring 2026 – University of Florida
Thursdays, Periods 7–9 (1:55–4:55 PM)
Location: Grinter Hall 376
Instructor: *Dr. Ane Alencar*

SYLLABUS

Course Information

Course Title: Social-Ecological Tipping Points in Amazonia
Course Number: LAS 6938
Credits: 3
Format: Face-to-face seminar with guest speakers (hybrid option as needed)
Meeting Time: Thursdays, Periods 7–9 (1:55–4:55 PM)
Location: Grinter Hall 376
First Class: January 15, 2026
Last Class: April 16, 2026
Spring Break: March 14–21, 2026

Instructor

Dr. Ane Alencar
Science Director, IPAM Amazonia
Affiliated Researcher, UF
Office Hours: By appointment (in-person or Zoom)
Email: aalencar@ufl.edu

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1. Course Description

This graduate seminar examines the emerging science of social-ecological tipping points in Amazonia, focusing on how climate change, land-use transitions, governance systems, and fire regimes interact to drive or prevent large-scale transformations across the world's largest tropical forest.

Students will explore both negative tipping points (forest dieback, biodiversity collapse, governance failures, social vulnerability) and positive tipping points (territorial protection, integrated fire management, collective action, sociobioeconomy transitions, restoration). The course emphasizes cascading effects of climate change and the role of fire as a reinforcing feedback that can accelerate ecological and social instability.

The importance of protected areas and vulnerable forest-dependent communities, including Indigenous Peoples, maroon communities, and extractivist populations, whose territories are at the frontline of these transitions, will also be discussed. Through weekly discussions, case studies, and seminars with invited scientists working across disciplines, students will analyze mechanisms, thresholds, and potential interventions to avoid negative and catalyze positive tipping points in Amazonia.

2. Learning Objectives

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

1. Explain ecological and social mechanisms that lead to tipping points in Amazonia.
2. Evaluate the cascading climate–fire–land-use interactions that destabilize ecosystems.
3. Analyze the vulnerabilities and adaptive capacities of Indigenous and local communities.
4. Assess the role of territorial rights, protected areas, and governance systems as resilience pillars.
5. Distinguish negative vs. positive tipping pathways and identify leverage points for transformation.
6. Critically evaluate interdisciplinary literature and apply it to real-world Amazon events.
7. Produce a rigorous policy brief addressing a key Amazon tipping point challenge.

3. Course Format and Expectations

- Weekly sessions combine short lectures, student-led discussions, and invited guest seminars with scientists and practitioners.
- Students will read 3–5 key papers per week and submit short reflections.
- Each student will lead at least one seminar discussion.
- Each student will peer review a colleague´s policy brief draft
- Final projects may take the form of a policy brief with presentation

Weekly 3-hour session includes:

- Short instructor lecture
- Student-led discussion of weekly readings
- Guest seminar (scientists, policymakers, fire experts)
- Group dialogue, synthesis, and next-week prep

4. Course Materials

All readings are provided on Canvas.
Some weeks include recommended readings for deeper engagement.

5. Assignments & Grading

Assignment	Description	%
Reading Reflections (10 weeks)	1–2 page informal reflections due Wed 11:59 pm	20%
Class Facilitation	Lead one weekly discussion (15-min intro + guiding dialogue)	10%
Policy brief draft	Expanded outline or draft of the Policy brief	-
Peer Review of Policy Brief Draft	Detailed written review of a colleague's draft	10%
Final Policy Brief	6–8 pages	35%
Policy Brief presentation	Presentation of Policy Brief	10%
Participation	Active, respectful, informed engagement	15%
TOTAL		**100%**

Final Policy Brief (35%)

Students will produce a professional policy brief (6–8 pages) containing problem definition, evidence use, stakeholder analysis, policy options, recommendations, addressing one tipping-point-related challenge in Amazonia, such as:

- Fire governance and prevention
- Territorial rights and resilience
- Climate–fire–drought cascades
- Indigenous/local community adaptation
- Sociobioeconomy as a positive tipping pathway, among others

A detailed rubric will be provided on Canvas.

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6. Weekly Schedule

Week 1 — Jan 15

Introduction: The Amazon as a Social-Ecological System

Course overview; definitions; importance of Amazon social-ecological systems.

Week 2 — Jan 22

Understanding Tipping Points: Theory and Detection

Resilience, feedback loops, thresholds. Guest speaker

Week 3 — Jan 29

Climate Forcing and Cascading Effects
ENSO, Atlantic SST, extreme droughts, moisture recycling. Guest speaker

Week 4 — Feb 5

Fire as a Driver and Accelerator of Tipping Dynamics
Fire ecology; Amazon fire regimes; compounding disturbances. Guest speaker

Week 5 — Feb 12 (on line class)

Deforestation, Degradation, Fragmentation & Dieback Risk
Forest–climate interactions; hydrological thresholds.

Week 6 — Feb 19

Vulnerability and Resilience of Indigenous and Local Communities
Climate justice; local adaptation; traditional knowledge.

Week 7 — Feb 26

Territorial Rights as Foundation for Avoiding Negative Tipping Points
Protected areas, Indigenous lands, governance effectiveness.
Note: Class meets as usual during POC week

Week 8 — Mar 6 (Hand in Draft of policy brief)

Governance, Power, and Inequality
Land grabbing, illicit economies, institutional capacity.

SPRING BREAK — Mar 14–21

Week 9 — Mar 27 (Hand in Peer review on colleagues Policy brief draft)

Positive Tipping Points: Restoration, Collective Action, and Sociobioeconomy
Social contagion, behavioral tipping, regenerative practices.

Week 10 — Apr 3

Cross-Regional Lessons: Congo Basin, Indonesia, Amazon
Comparative tipping dynamics and South–South learning.

Week 11 — Apr 10

Integration: Early Warning Systems & Modeling Tipping Cascades
Scenario analysis; identifying leverage points.

Week 12 — Apr 16 (Final Class – hand in final Policy brief)

Student Presentations + Synthesis Dialogue
What is needed to steer Amazonia toward a resilient future?

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7. **Generative AI Policy (Flexible Use)**

Students may use generative AI tools (e.g., ChatGPT, Claude, Gemini) for:

- brainstorming
- structuring ideas
- summarizing readings
- outlining
- language editing

Not allowed:

- AI-generated text in final versions of the reading reflection, peer review or final policy brief
- AI summaries of academic readings *without consulting the reading itself*
- Any use that replaces independent, critical thinking

Required:

Students must include a brief AI use statement in each assignment (e.g., "I used ChatGPT to assist with outlining and grammar, but all analysis and final writing are my own.")

8. **Attendance Policy**

Attendance and active participation are essential for a seminar.
One absence is permitted; additional absences affect participation grade.

9. **Late Work Policy**

- Reading reflections, policy brief draft and final brief cannot be turned in late.
- Other assignments accepted up to 48 hours late with penalties.

10. **Course Evaluations**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online. Students can complete evaluations in three ways:

1. The email they receive from GatorEvals,
2. Their Canvas course menu under GatorEvals,
3. The central portal at https://my-ufl.bluera.com
    1. Guidance on how to provide constructive feedback is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

11. **Academic Policies and Resources**

Academic policies for this course are consistent with university policies. See https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

12. **Campus Health and Wellness Resources**

Visit https://one.uf.edu/whole-gator/topics for resources that are designed to help you thrive physically, mentally, and emotionally at UF.

Please contact UMatterWeCare for additional and immediate support.

13. 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.

14. Subject to Change Statement

Course content, readings, assignments, and schedule may be modified to best meet learning goals or respond to emerging events in the Amazon.