**ECOLOGY 404B: DIGITAL FIELD NOTES FROM A CHANGING PLANET**

Fall 2025 | Fully Asynchronous | “Where Bayous Meet Bytes”

# Instructor Information

✿ Dr. Mary K. Beals, Ph.D. Fisher Hall 224A | (225) 771-3012 mary.beals@sus.edu (response time: <48 hrs)

Office Hours: By appointment (or whenever the coffee’s fresh!)

Eco-Cafés: 1st Tuesday each month (Zoom link on Padlet)

# Course Introduction

# This updated syllabus (as of September 26, 2025, 05:33 PM CDT) incorporates AI tools and Science Gateways to enhance computational skills in ecology. These additions promote "computing beyond the desktop" for virtual fieldwork, aligning with NSF initiatives and preparing students for interdisciplinary careers. No major changes to structure; enhancements build on existing creativity and inclusivity.

# Course Description

# Explore Louisiana’s ecological systems through virtual fieldwork, AI tools, and real-world problem solving. This course emphasizes populations, communities, ecosystems, and human-environment interactions—balancing scientific principles with creativity, storytelling, and applied problem-solving. To enhance digital literacy, the course now integrates AI for ecological simulations (e.g., predictive modeling of bayou biodiversity) and Science Gateways for cloud-based HPC, enabling students to analyze large datasets on invasive species or climate impacts without advanced hardware. This fosters a "bytes-to-bayous" approach, bridging virtual tools with tangible environmental stewardship.

# Required Textbook & Materials

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* Molles Jr., M.C. & Simon, A.S. Ecology: Concepts & Applications (9th ed.) – McGraw-Hill Connect eBook.
* Technology Tools: Canvas, Padlet, NotebookLM, Flipgrid • AI & Science Gateways: Imageomics (AI-ecology toolkit for species trait analysis), Curipod (AI-generated interactive lessons), Jetstream2 (cloud HPC via NSF ACCESS for simulations), Cornell Virtual Workshop (HPC tutorials for biologists), HPC Carpentry (reproducible bio workflows). Free via Canvas links; instructor provides ACCESS allocation for Jetstream2. No local install needed.

# Course Goals & Objectives

By the end of this course, students will:

* Understand ecological concepts at the individual, population, community, and ecosystem levels.
* Apply ecological principles to real-world environmental challenges.
* Use AI tools, simulations, and digital platforms for ecological inquiry.
* Experience computing beyond the desktop using Science Gateways for ecological modeling and analysis (e.g., running bayou population simulations on Jetstream2).
* Develop creative science communication skills (memes, podcasts, infographics).
* Engage in informed discussions about ecological and environmental issues.

# Grading & Evaluation

|  |  |  |
| --- | --- | --- |
| Category | % | Examples |
| Exams | 30% | Online, short-answer |
| Labs / Field Missions | 30% | Eco-detective assignments |
| Creativity | 20% | Memes, infographics, haikus |
| Engagement | 20% | Padlet & discussion boards |

Grading Scale: A = 90–100 | B = 80–89 | C = 70–79 | D = 60–69 | F < 60

# Course Policies & Expectations

Late Work – Students may use 2 Grace Tokens for deadline extensions (redeemable via meme submission). After tokens are used, late work will not be accepted.

AI Usage Policy – AI is welcome as a partner in your learning. You must:

* Acknowledge AI support with a citation (e.g., “ChatGPT drafted this outline; analysis is mine”).
* Demonstrate your own critical thinking in all submissions.
* Avoid presenting AI-generated work as solely your own (violates SU’s Academic Integrity policy).

Inclusivity – All voices are valued. Respect is required in discussions. Technology & Netiquette – Students must use SU Canvas and SUBR email. Be professional, respectful, and thoughtful in digital communications.

**Institutional Policies**

# Academic Dishonesty

Southern University and A&M College's Student Code of Conduct (Code 1.1) identifies academic dishonesty as any deliberate attempt to gain an unfair advantage in academic work. Examples include cheating, falsification of information, fraud, plagiarism, and unauthorized access to academic records...

# Academic Grievances

Southern University and A&M College students may seek redress in academic decisions when they believe the decision is unfair or ungrounded. The academic grievance procedure provides prompt and equitable resolutions...

# ADA Compliance/Disability Services

Southern University Baton Rouge is committed to providing reasonable accommodations for students with documented disabilities in compliance with the ADA...

Contact Information:

Southern University Office of Disability Services

Carla Popularas, Coordinator

P.O. Box 11298

Baton Rouge, LA 70813

Phone: (225) 771-3546

Email: ods@subr.edu

Website: www.subr.edu/ods

# Disruption of the Academic Process

The University's Student Code of Conduct (Codes 1.6 and 2.2) broadly defines disruption/obstruction as any major/minor action which obstructs an official University function, such as teaching, research, or administration...

# Statement of Non-Discrimination / Title IX

In compliance with Title IX, Title VI and VII of the Civil Rights Act, Section 504 of the Rehabilitation Act, and other laws, Southern University forbids discriminatory or harassing conduct...

# Standards for Satisfactory Academic Progress (SAP)

The Higher Education Act of 1965 requires that institutions establish reasonable standards of Satisfactory Academic Progress as a condition of aid eligibility...

# Student Email Policy

The University's email policy describes the appropriate use of university email facilities, associated responsibilities, and rights of all users of official Southern University email accounts...

# Tobacco-Free Campus Policy

The Southern University System (SUS) maintains a 100% Tobacco-Free Policy. Smoking and tobacco use of any kind is prohibited on all SUS campuses and properties...

# Course Evaluations (Watermark)

Course Evaluations & Surveys by Watermark is an easy-to-use course evaluation system that integrates directly with Canvas...

# Follett Access Textbook Program

Follett Access is a partnership between the Southern University System and the SUBR Bookstore that allows you to rent textbooks at reduced cost...

# Mental Health Resources

Mental health resources and support are available from the University Counseling Center (UCC). Free counseling and crisis intervention are provided in a safe, confidential setting...

# Incomplete Grades Policy

Work that is of passing quality but, because of extenuating circumstances, is not complete, may be graded 'I'-Incomplete...

# Late Enrollment Disclaimer

A student enrolling in the course late will be responsible for completing all assignments and exams on time. The academic calendar is published long in advance of the start date...

# Course Schedule (Fall 2025: Aug 18 – Dec 10)

| **Dates** | **Module** | **Key Activities** |
| --- | --- | --- |
| Aug 18–24 | Bayou Beginnings | Padlet intro, NotebookLM practice *(Include AI/HPC intro: Imageomics for framework analysis; Jetstream2/CVW/HPC Carpentry for ecological data workflows)* |
| Aug 25–Sep 7 | Survival Mode | Heat-resistant crawfish debate *(AI simulation of adaptation strategies using Curipod)* |
| Sep 8–21 | Population Thrillers | Predator-prey simulations *(HPC Carpentry for modeling workflows on Jetstream2)* |
| Sep 22–Oct 5 | Species WWE | Invasive species role-play *(AI-enhanced infographics via Imageomics)* |
| Oct 6–15 | Ecosystem Heist | Digital field lab *(Virtual HPC mission on ecosystem data analysis)* |
| Oct 16–17 | Fall Break | No work—go touch grass! |
| Oct 18–Nov 1 | Planet on Fire | Climate change podcast analysis *(AI/VR integration for environmental awareness*) |
| Nov 2–Dec 10 | Final Eco-Fiesta | Capstone projects + optional Zoom party *(HPC-supported capstone simulations)* |

# Student Statement of Understanding (Course Contract – Fall 2025)

I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, acknowledge that I have received the syllabus for Ecology 404B and understand the course structure, expectations, grading, and SU academic policies. I agree to:

* Uphold academic integrity, including honest disclosure of AI use.
* Participate actively in online and creative course activities.
* Complete assignments on time, using Grace Tokens when needed.
* Communicate respectfully with peers and the instructor.
* Seek help when I encounter challenges.

Signature & Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Keep in mind this document is subject to change as needed without warning.