

Rationale for Environmental Restoration ENVS 190S

Since Environmental Restoration will be offered as a freshman seminar, most students will not have a strong background in our regional ecology. Therefore, the first few weeks of the semester will focus on an introduction to ecosystem functions, an overview of ecosystems of the southeast, readings on the pre-colonial landscape of the southeastern United States and participation on field trips to record observations in local ecosystems. In-class and weekend field experiences will be required of the students, beginning with trips to Lullwater Park, Burbank Park, Hahn Woods and Wesley Woods, and then off campus to Arabia Mountain, the Alcovy Swamp and the Joyce Kilmer National Forest. The students will be required to participate in restoration activities, including trail restoration, stream restoration and clean up, and the removal of invasive species. In order to establish a connection with the natural world and its restorative capacity, the students will keep illustrated field journals during the semester. The middle section of the course will address human impact on the natural environment. We will analyze changes in land use and the effects these changes have on ecosystems. Readings in *Water: A Natural History* by Alice Outwater will be used to document the effects of human development on water resources. Readings on the effects of roadways, sprawl and invasive species will be discussed. The final section of the course will center on the ethics and controversies related to restoration practices. Students will present case studies of restoration projects.

Environmental Restoration ENVS 190S Syllabus ~ Fall 2007

Instructor: Anne Larson Hall
Office: E 540 Math and Science Center 400 Dowman Drive
Department of Environmental Studies
Voice mail: 727-2863
E-mail: ahall04@emory.edu
Classroom: W502 Math and Science Center ~ with trips ~ M 1-4 p.m.
Texts: Higgs, Eric. *Nature by Design: People, Natural Processes and Ecological Restoration*. The MIT Press, 2003.
Throop, William. *Environmental Restoration: Ethics, Theory and Practice*. Humanity Books, 2000.
Outwater, Alice. *Water: A Natural History*. Perseus Books, 1996.
Sutton, Ann and Myron. *Eastern Forests: The Audubon Society Nature Guides*. Alfred A. Knopf, 1985.
Bound sketchbook and drawing supplies ~ list provided at first class meeting

Grading: **Field Trips and Restoration Work ~ 20%**
(**Four trips are required outside of class time, listed below as FRIDAY OR SATURDAY TRIPS** Field trip dates are tentative.)

Field Journal ~ 25%

Short Writing Assignments and Presentations ~ 30%

Restoration Case Study ~ 20%

Participation and Attendance ~ 5%

Academic Integrity: **All students must meet the standards of the Emory College Honor Code.**

Date	Scheduled Topics and Activities
Monday, September 3	No Class ~ Labor Day Holiday
Monday, September 10	Course Introduction Geologic History of the Southeast Introduction to the flora and fauna of the southeastern forests Ecosystems of the Southeast Ecosystem Functions Planet Earth: Seasonal Forests Readings from <i>Keeping a Nature Journal</i> by Clare Walker Leslie and Charles E. Roth and <i>The Art of Field Sketching</i> by Clare Walker Leslie. Begin Field Journals ~ Discuss examples of Journals (<i>Audubon, Thoreau, Lewis and Clark, Bartram and others</i>) Baker Woodlands and Lullwater Walk ~ Bring Field Guide
Monday, September 17	The South Atlantic Landscape by Timothy Silver ~ Pre-colonial Ecology Chapter 2 in Silver ~ Perspectives on the land Begin During Class: Posting images and additional references for Chapters 2 and 3 in Silver Film on Ecosystem Services Peer review of the first week's field journals Field Trip to Hahn Woods and Wesley Woods ~ Bring Field Guide and Journal
Monday, September 24	Arabia Mountain Field Trip Bring Field Guide and Journal
Monday, October 1	The South Atlantic Landscape by Timothy Silver ~ Pre-colonial Ecology Chapter 3 in Silver ~ Perspectives on the people Land use practices in the 1500s Readings from <i>Nature by Design: People, Natural Processes and Ecological Restoration</i> by Eric Higgs Film: Planet Earth: Freshwater Wetland Restoration Peer review of third week's field journals

Monday, October 8

No Class ~ Fall Break

FRIDAY, OCTOBER 12
SATURDAY OCTOBER 13

FIELD TRIP TO JOYCE KILMER NATIONAL FOREST

Monday, October 15

Presentation 1 ~ *Water: A Natural History* Alice Outwater

Chapter 1 ~ The Fur Trade

Chapter 2 ~ Nature's Hydrologists

Presentation 2 ~ *Water: A Natural History* Alice Outwater

Chapter 3 ~ The Woods

Chapter 4 ~ The Voyage of Rainfall

Changing Landscapes: An Ecological Perspective I.S. Zonneveld and
R.T.T. Forman, Ed.

Chapter 9 The Georgia Landscape: A Changing Resource Eugene Odum
and Monica Turner

Parks, Trails and Roadways

Assessing and Managing the Ecological Impacts of Paved Roads

National Research Council Publication

Chapter 3: Effects of Roads on Ecological Conditions

Chapter 4: Ameliorating the Effects of Roads

Campus Survey of Impervious Surfaces

SATURDAY, OCTOBER 20 ~ FIELD TRIP ~ RIVERS ALIVE CLEANUP

http://riversalive.com/ra_index.htm

Monday, October 22

No Class This Monday ~ I will be attending a stream restoration workshop

SATURDAY, OCTOBER 27 ~ FIELD TRIP TO ALCOVY CONSERVATION CENTER

Monday, October 29

Presentation 3 ~ *Water: A Natural History* Alice Outwater

Chapter 5 ~ A Sea of Grass

Chapter 6 ~ Plowing the Plains

Presentation 4 ~ *Water: A Natural History* Alice Outwater

Chapter 7 ~ The Water Over the Dam

Chapter 8 ~ Mussels, Gators, and the Corps

Readings from ***Restoring Nature: Perspectives from the Social Sciences
and Humanities*** edited by Paul H. Gobster and R. Bruce Hull

Chapter 9: Negotiating Nature: Making Restoration Happen in an Urban
Park Context

Urban Sprawl and Public Health Howard Frumkin, Lawrence Frank and
Richard Jackson

Monday, November 5

Presentation 5 ~ *Water: A Natural History* Alice Outwater

Chapter 9 ~ Aqueducts and Toilet Bowls

Presentation 6 ~ *Water: A Natural History* Alice Outwater

Chapter 10 ~ Down the Drain, Up the Stack

Presentation 7 ~ *Water: A Natural History* Alice Outwater

Chapter 11 ~ What Sludge Tells You

Classification of stream morphology and stream assessment criteria

FRIDAY, NOVEMBER 9 ~ TRAIL RESTORATION FIELD TRIP

Monday, November 12

Stream Assessment: Peavine Creek in Burbank Park

Environmental Restoration: Ethics, Theory, and Practice

William Throop ~ Discussion of Chapters 1-3

Marguerite Holloway ~ The Everglades: degradation and remediation, goals and costs

Stephanie Mills ~ Mattole River salmon restoration: Social perspectives on restoration

Susan Power Bratton ~ The dynamic nature of ecosystems, expansion of restoration goals

FRIDAY, NOVEMBER 16 ~ STREAM RESTORATION FIELD TRIP

Monday, November 19

Stream restoration: Richardson's Creek in Lullwater Park

Environmental Restoration: Ethics, Theory, and Practice

William Throop ~ Group-led discussions of Chapters 4-8

Are we "faking nature," as Robert Elliot argues? Do restoration projects reestablish the functions of the pre-disturbance ecosystems?

Readings from Nature by Design: People, Natural Processes and Ecological Restoration by Eric Higgs

Monday, November 26

The Invasion of the.....nonnative plants!

Nonnative Invasive Plants of Southern Forests

<http://www.invasive.org/weeds/>

Environmental Restoration: Ethics, Theory, and Practice

William Throop ~ Discussion of Chapters 11 and 12

Must all species introduced by humans be eliminated? Are restoration practices that require the killing of nonindigenous individuals justified?

Readings from Nature by Design: People, Natural Processes and Ecological Restoration by Eric Higgs

FRIDAY, DECEMBER 1 ~ FIELD TRIP ~ IVY PULL ON EMORY CAMPUS

Monday, December 3

Case Study Discussions

Monday, December 10

Case Study Discussions