Wave Hill A public garden & cultural center 675 West 252nd Street Bronx, New York 10471-2899 718.549.3200 FAX 718.884.8952 www.wavehill.org

Course: Restoration of NYC's Natural Areas
Instructor: Jonathan Rosenthal
Dates: 6/29/2016–8/19/2016
Location: Wave Hill
Total Course Hours: 60.5

SAMPLE SYLLABUS 2016

Course Objectives:

The primary objective of this course is to provide students with a solid, conceptual background with which to understand and engage with ecological restoration efforts in NYC's natural areas. Drawing from different topics, including NYC natural history, plant science, forest ecology and soil science, students will explore the underlying concepts that inform the theory and practice of ecological restoration. This course will use interactive discussion, hands-on activities, field data collection projects, readings, guest speakers and field trips to provide a thorough introduction to the subject.

Upon completing this course, students will be able to:

- apply and integrate concepts and methods for analyzing real world restoration problems
- critically read scientific literature concerning ecological restoration
- collect and analyze ecological data, and create graphs and charts to show findings
- understand underlying concepts important to ecological restoration
- recognize logistical and political considerations in the domain of land management and public policy

Grade Breakdown:

Quizzes: 20%
Class Participation: 10%
Field-based Data Collection: 10%
Final Project Preliminary Assignments: 25%
Final Poster: 25%
Final Presentation: 10%

WEEK 1

Wednesday, June 29
Module 1. **What is restoration ecology and why is it necessary?**

Module 2. **Invasive species**

WEEK 2

Wednesday, July 6
Module 3. **Ecological Principles**
Learning objective and topics covered:

Module 4. **Plant parts—aboveground, belowground and how they fit together**

Thursday, July 7
Module 5. Pre-European Natural History of NYC, Part I. Geology and Glaciation

Module 6. Biomes to microhabitats—which species *should* occur "here"?

WEEK 3

Monday, July 11—Annotated Bibliography due at 11:59pm

Tuesday, July 12
Module 7. NYC Pre-European Natural History, Part II. The ecology of Welikia

Module 8. How can science guide restoration efforts?

Wednesday, July 13
Module 9. Soil Formation, Profile and Structure (to be done at Ward Pound Ridge Reservation)

Module 10. Introduction to Hydrology (to be done at Ward Pound Ridge Reservation)

Module 11. Examining forest structure and succession in the field (to be done at Ward Pound Ridge Reservation)

Thursday, July 14
Module 12. NYC Natural History, Part III: 300 Years of Urbanization

Module 13. Plant dispersal and persistence using seeds and other structures, and implications for invasive plant management

WEEK 4

Monday, July 18—Natural History assignment due at 11:59pm

Tuesday, July 19
Module 14. It's Not Easy Being Green: Challenges to Plant Function from Herbivory, Disease and Other Sources of Stress

Module 15. NYC-area Forest Communities

Thursday, July 21
Module 16. Chemical Properties of Woodland Soil

Module 17. Soil and its Effects on Plant Communities in NYC

WEEK 5

Monday, July 25—Group Site History assignment due at 11:59pm

Tuesday, July 26
Module 18. Selection, Design and Implementation of Restoration Projects—More Than Just Science

Module 19. NYC Ecological Restoration History 101

Thursday, July 28
Module 20. NYC Wildlife

Module 21. Inferring the Health of an Ecosystem: The 2015 Ecological Assessment

WEEK 6

Monday, August 1—Group Literature Review due at 11:59pm

Module 22. Human and Natural History of Inwood Hill Park

Module 23. Entitation in Inwood Hill Park

Thursday, August 4
Module 24. The novel ecosystem debate

Module 25. Restoration Design: NRG Case Studies

WEEK 7

Monday, August 8—Group Methods write-up due 11:59pm

Tuesday, August 9
Module 26. Van Cortlandt Park Field Trip

Module 27. Van Cortlandt Park Restoration Field Evaluation

Module 28. Designing/Evaluating a Restoration Project

WEEK 8

Tuesday, August 16—*Final Presentations (9am–12:30pm)*