

ER313 Online Course Outline

Introduction to the Course

Biodiversity and Conservation Biology is one of the core courses in the **Restoration of Natural Systems diploma/certificate program**. This course will introduce you to the science surrounding the biodiversity crisis. The scientific approach is extremely important in planning, executing and monitoring restoration and conservation projects. The principles presented in this course should help you avoid many of the pitfalls that await those involved in such projects, but just learning the principles is not enough. It is equally important to understand the process by which scientific information is produced, and to develop the skills necessary to access and assess that information.

Course Goals

The major goal of this course is to provide you with an understanding of the fields of Conservation Biology, Biodiversity, and Ecology and their importance to restoration of natural systems projects.

We will focus on understanding:

- current definitions of conservation biology
- scientific methods and recognizing the strengths and limitations of this mode of inquiry
- current definitions of biodiversity and the relationship of evolution to biodiversity
- how economic, social and ethical values are assigned to biodiversity and the impact of these views on conservation.
- population ecology, biology of endangered species, and issues of disturbance on conservation
- threats to biodiversity including human degradation, vulnerability to extinction and habitat destruction
- conservation strategies including the design of protected areas

As well, we hope to:

- connect you with other people of similar interests, both locally and at a distance
- impress upon you the critical role of biology and ecology in restoration and the ethical value of restoration

Course Module Topics

Module 1: Conservation Biology and Species Diversity

- Unit 1: What is Conservation Biology
- Unit 2: Biological Diversity and Evolution
- Unit 3: Species Diversity
- Unit 4: Evolution and the Diversity of Life

Module 2: Value of Biological Diversity

- Unit 5: Assigning Value to Biodiversity and Ecosystem Services
- Unit 6: Indirect Economic Values of Biodiversity
- Unit 7: Ethical Values of Biodiversity

Module 3: Ecology

- Unit 8: Population Ecology and Problems with Small Populations
- Unit 9: Applied Population Biology
- Unit 10: Establishing New Populations
- Unit 11: Community Organization
- Unit 12: Disturbance

Module 4: Threats to Biodiversity

- Unit 13: Human Domination of Earth's Ecosystems
- Unit 14: Fragmentation and Degradation
- Unit 15: Extinctions
- Unit 16: Overexploitation
- Unit 17: Invasive Species Introductions and Disease

Module 5: Conservation Strategies

- Unit 18: Protected Areas
- Unit 19: Designing Networks of Protected Areas
- Unit 20: Conservation Outside Protected Areas
- Unit 21: Conservation, Law, and Human Societies
- Unit 22: Traditional Societies, Conservation and sustainable Use

Assignments

Every module includes a review question assignment and a knowledge check (quiz). Module assignments and knowledge checks are due the day before the Module Discussion begins.

Module Review Question Assignments	Due (11:55pm, Pacific Time)	%
Module 1	Friday, Week 4	10
Module 2	Friday, Week 7	10
Module 3	Friday, Week 10	10
Module 4	Friday, Week 13	10
Module Knowledge Checks (Quizzes)	Due (11:55pm, Pacific Time)	%
Module 1	Sunday Week 4	5
Module 2	Sunday Week 7	5
Module 3	Sunday, Week 710	5
Module 4	Sunday, Week 13	5