

# Environmental Science, Part 2



## How to Take This Course

Complete all the quizzes and the assignment in each unit. Once the quizzes for a unit are complete, you will have access to the unit test. We recommend you complete the unit assignment before you attempt the unit test, the assignment will help you prepare. You will have access to the final when all unit tests are complete and your assignments are graded.

Allow 2-3 days for an assignment to be graded. Read the full course instructions to understand the course grading.

- [Instructions for the Course](#)
- [How This Course Works & Suggested Timeline](#)
- [Submitting Your Assignments](#)
- [Ask The Teacher](#)

Meet your teacher for this course and ask a question.

## Unit 1: Agriculture and Land Use

In this unit we will learn about the evolution of agriculture over time, fertilizer and Norman Borlaug's Green Revolution in agriculture, and relevant topics in soil health and biodiversity. Major land-use issues and their effects on ecosystems and the climate are discussed, including using land for growing biofuel, deforestation, over-fishing, and urban sprawl. To contextualize these issues which center around using land and its resources, we will introduce the philosophical/economic idea of the Tragedy of the Commons.

- 1.1 Evolution of Agriculture Over Time
  - 1.1 Quiz
- 1.2 Fertilizer and The Green Revolution
  - 1.2 Quiz
- 1.3 Soils and Soil Health
  - 1.3 Quiz
- 1.4 Growing Fuel
  - 1.4 Quiz
- 1.5 Deforestation
  - 1.5 Quiz
- 1.6 Biodiversity
  - 1.6 Quiz
- 1.7 Tragedy of the Commons
  - 1.7 Quiz
- 1.8 Over-fishing
  - 1.8 Quiz
- 1.9 Urban Sprawl
  - 1.9 Quiz
- Unit 1 Assignment - The Tragedy of the Commons

## Unit 2: Food and Agricultural Sustainability

While last unit discussed the development and science behind agriculture, this unit delves into the multifaceted concept of "sustainable agriculture" as well as the connection between cattle farming and greenhouse gas production. It discusses many different strategies that farmers, communities, and consumers adopt in an attempt to make their food consumption or agricultural operation more environmentally-friendly. Such strategies include: organic, free-range and grass-fed products, Fair Trade products, farmers' markets and community supported agriculture (CSA), permaculture, community gardens, native gardens, and food forest gardens.

- 2.1 Sustainable Agriculture
  - 2.1 Quiz
- 2.2 Organic, Free Range & Grassfed
  - 2.2 Quiz
- 2.3 Fair Trade Products
  - 2.3 Quiz
- 2.4 Farmers Markets and Community Supported Agriculture
  - 2.4 Quiz
- 2.5 Meat and the Environment
  - 2.5 Quiz
- 2.6 Permaculture
  - 2.6 Quiz
- 2.7 Community Gardens
  - 2.7 Quiz
- 2.8 Native and Food Forest Gardens
  - 2.8 Quiz
- Unit 2 Assignment - Strategies for Sustainable Consumption

## Unit 3: Hazardous Waste and Plastic Pollution

Continuing the theme of land use, this unit is all about production of waste, where it goes, and strategies for disposing of waste on both societal and individual scales. Major themes covered include landfills, plastic pollution, electronic waste, and ways to avoid waste like recycling, up-cycling and reusing, and cleaning up plastic pollution. This unit also discusses what individuals should do with certain types of hazardous waste, and teaches how to properly dispose of the following (as well as the effects it has on the environment if they dispose of it incorrectly): old cars, used motor oil, harmful chemicals and cleaners, and old medicines.

- 3.1 Landfills and Plastic Pollution
  - 3.1 Quiz
- 3.2 Avoiding Waste
  - 3.2 Quiz
- 3.3 Recycling
  - 3.3 Quiz
- 3.4 Upcycling and Reuse
  - 3.4 Quiz
- 3.5 Electronic Waste
  - 3.5 Quiz
- 3.6 Disposing of Old Cars and Used Motor Oil
  - 3.6 Quiz
- 3.7 Disposing of and Alternatives to Harmful Chemicals and Cleaners
  - 3.7 Quiz
- 3.8 Disposing of Old Medicines
  - 3.8 Quiz
- 3.9 Cleaning Up Plastic Pollution
  - 3.9 Quiz
- Unit 3 Assignment - Trash Audit

## Unit 4: Ecology, Economics and Governance

This unit discusses ecological principles related to consumption, growth, and environmental economics. Principles of environmental economics that are discussed include the basics of what environmental economics is, the triple bottom line, cost-benefit analysis, externalities, natural capital and ecosystem valuation, carbon pricing (cap-and-trade systems and carbon taxes), as well as how the concept of the "growth economy" relates to the idea of sustainability. Relevant ecological issues discussed here include population growth and Earth's carrying capacity, as well as the contrast of conservation versus preservation. A relevant governance concept discussed in this unit is the idea of sustainable development.

- 4.1 Population and Carrying Capacity
  - 4.1 Quiz
- 4.2 Environmental Economics
  - 4.2 Quiz
- 4.3 The Growth Economy
  - 4.3 Quiz
- 4.4 The Triple Bottom Line
  - 4.4 Quiz
- 4.5 Cost-Benefit Analysis and Externalities
  - 4.5 Quiz
- 4.6 Natural Capital and Ecosystem Valuation
  - 4.6 Quiz
- 4.7 Carbon Pricing: Cap and Trade Systems, Carbon Taxes
  - 4.7 Quiz
- 4.8 Sustainable Development
  - 4.8 Quiz
- 4.9 Types of Conservation and Preservation
  - 4.9 Quiz
- Unit 4 Assignment - Principles of Environmental Economics

## Unit 5: Environmental Ethics and Philosophy

This unit exists under the premise that one can't truly discuss ideas like sustainability or even the concept of "our environment" without discussing certain ethical and philosophical systems and the different ways that people view nature. As such, in this unit, we learn about: corporate social and environmental responsibility, environmental value systems (technocentrism, ecocentrism, anthropocentrism), Gifford Pinchot's Resource Conservation Ethic versus Aldo Leopold's Land Ethic, bioregionalism, the legal rights of nature, environmental justice, and chemist James Lovelock's Gaia Hypothesis.

- 5.1 Corporate Social and Environmental Responsibility
  - 5.1 Quiz
- 5.2 Environmental Value Systems
  - 5.2 Quiz
- 5.3 The Resource Conservation Ethic and the Land Ethic
  - 5.3 Quiz
- 5.4 Bioregionalism
  - 5.4 Quiz
- 5.5 The Rights of Nature
  - 5.5 Quiz
- 5.6 Environmental Justice
  - 5.6 Quiz
- 5.7 The Gaia Hypothesis
  - 5.7 Quiz
- Unit 5 Assignment - Environmental Ethics

## Unit 6: Strategies for A Sustainable Future

In this unit, we reflect on some strategies that regions and societies are adopting to deal with climate change and other environmental issues. Strategies discussed include: biomimicry in products and architecture; transition towns, ecovillages and ecocities as ways of making towns and cities more sustainable; green technology; geoengineering and other means of climate change mitigation; and climate change adaptation

- 6.1 Biomimicry
  - 6.1 Quiz
- 6.2 Transition Towns
  - 6.2 Quiz
- 6.3 Ecovillages and Ecocities
  - 6.3 Quiz
- 6.4 Green Technology
  - 6.4 Quiz
- 6.5 Geoengineering
  - 6.5 Quiz
- 6.6 Climate Change Mitigation and Adaptation
  - 6.6 Quiz
- Unit 6 Assignment: Climate Change Mitigation and Climate Change Adaptation

## The Final Exam

Complete all of the assignments and unit tests in this course. Once they are complete and the assignments have been graded, the Final will be made available and appear below the Practice Final.

**Warning:** You have only ONE attempt at the Final. There is a 3 hour time limit.

Are you ready to take the Final? We highly recommend you take the Practice Final first and if you are weak in any area, review the relevant course material again. You have unlimited attempts at the practice final; it will help you to prepare.

Good Luck!!

- [Practice Final Exam](#)

## Course Completion

The "Certificate" and "Course Completion Record Request" links below are not active, they cannot be accessed until you have achieved at least 60% for the course total. Upon satisfying, they will become active and you can use them.

Before you go, we would appreciate your opinion on the course, please take 1 minute to complete the feedback form.

We hope you enjoyed this course!

- [Course Feedback](#)

Thank you for taking this course! Let us know what you think about it.

- [Request a Course Completion Record](#)

If you need SVHS to send proof of your course completion directly to your school complete this form.

**Restricted** Not available unless: The activity **Final Exam** is marked complete

- [Certificate of Completion](#)

**Restricted** Not available unless: The activity **Final Exam** is marked complete