

12/159:008 – Introduction to Environmental Science

Course Description:

This course presents a broad overview of Earth system processes and resources. Emphasis is given to the role of humans in natural systems; the effect of geologic, biologic, and climatic processes on human settlement and lifestyle; the short and long term effects of human activities on the environment; and the search for sustainability. Topics covered in lectures include ecosystems and their management, climate, soil and food supply, energy systems, surface water and groundwater, population, effects on human health, future availability of resources, waste management, and opportunities for conservation.

Required Textbook:

"Environment: The Science Behind the Stories", by Scott Brennan & Jay Withgott, **4th Edition**. ISBN 0-321-71534-9.

Part 1

Week 1: 8/23 & 8/25

Ch. 1: Science and Sustainability: An Introduction to Environmental Science
Ch. 6: Environmental Ethics and Economics: Values and Choices

Week 2: 8/30 & 9/1

Ch. 6: Environmental Ethics and Economics: Values and Choices (continued)
Ch. 7: Environmental Policy: Decision Making and Problem Solving

Week 3: 9/6 & 9/8

Ch. 2: Earth's Physical Systems: Matter, Energy, and Geology
Ch. 5: Environmental Systems and Ecosystem Ecology AND
Ch. 15 (400-408); Ch. 16 (432-444); Ch. 17 (461-468)

Week 4: 9/13 & 9/15

Ch. 5: Environmental Systems and Ecosystem Ecology AND
Ch. 15 (400-408); Ch. 16 (432-444); Ch. 17 (461-468) (continued)
Thursday, 9/15: *Term Exam 1* (100 points)

Week 5: 9/20 & 9/22

Ch. 3: Evolution, Biodiversity, and Population Ecology
Ch. 4: Species Interactions and Community Ecology
Ch. 15: Freshwater Systems and Resources

Week 6: 9/27 & 9/29

Ch. 15: Freshwater Systems and Resources (continued)
Ch. 16: Marine and Coastal Systems and Resources

Week 7: 10/4 & 10/6

Ch. 17: Atmospheric Science and Air Pollution
Ch. 18: Global Climate Change

Week 8: 10/11 & 10/13

Ch. 18: Global Climate Change (continued)

Thursday, 10/13: **Term Exam 2** (100 points)

Part 2

Week 9:

Tues. 10/18 Ch. 8: Human Population; Ch. 13: The Urban Environment

Thur. 10/20 Ch. 22: Waste Management; **Guest Lecture**

Week 10:

Tues. 10/25 Ch. 9: Soil & Agriculture; Ch. 10: Agriculture, Biotechnology, & the Future of Food

Thur. 10/27 **Movie**

Week 11:

Tues. 11/1 Ch. 14: Environmental Health and Technology; **Movie**

Thur. 11/3 Ch. 11: Biodiversity & Conservation Biology; **Movie**

Week 12:

Tues. 11/8 Ch. 12: Resource Management, Forestry, Land Use, and Protected Areas

Thur. 11/10 **Guest Lecture**

Week 13:

Tues. 11/15 **Term Exam 3**

Thur. 11/17 **Movie; Projects Due**

Week 14:

Thanksgiving Recess – No Class

Week 15:

Tues. 11/29 Ch. 19: Fossil Fuels; Ch. 23: Mining; Ch. 20: Conventional Energy Alternatives

Thurs. 12/1 **Movie**

Week 16:

Tues. 12/6 Ch. 21: New Renewable Energy Alternatives; Ch. 24: Sustainable Solutions

Thurs. 12/8 **Guest Lecture**