

# SOPHIA Learning

## ENVS1001: Environmental Science (3 semester credits)

### COURSE DESCRIPTION

The course helps the students to learn about environmental science in the world today. Students will develop an understanding of the scientific principles and processes that shape our environment, as well as the impact of human activities. Students will apply knowledge of a wide range of environmental issues in context, exploring topics such as natural resources, endangered species, pollution, and climate change. Upon completion of the course, students will be able to describe environmental science; apply principles of earth science, ecology, and conservation; articulate impacts of development, agriculture, and waste on environment; and analyze environmental issues, policies, and solutions.

**Course Effective Date:** April 2020 - Present

**Prerequisite(s):** Lower-division baccalaureate/associate degree course – no prerequisites

**Length of course:** This is a self-paced course. Students have 60 days with an additional 30 day extension (if needed) to complete the course.

**ACE CREDIT® Recommendation:** In the lower-division baccalaureate/associate degree category, 3 semester hours in environmental science (3/20).

### LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

1. Describe environmental science
2. Use and interpret graphs and charts
3. Apply principles of earth systems, ecology, and conservation
4. Identify impacts of development, agriculture, and waste
5. Analyze environmental issues, policies, and solutions

### OUTLINE OF MAJOR CONTENT AREAS

- Science & the scientific process
- Environmental science
- Environmentalism
- Scientific literacy
- Graphic literacy and graphs in environmental science
- Earth's formation and early life
- Continental drift and major extinctions
- Human arrival and expansion
- The impact of population growth
- Biodiversity
- Sustainability
- Ethics and stewardship
- Time, scale, and impact
- Earth systems
- Earth's features
- Biomes
- Natural resources
- Ecology

- Population ecology
- Community ecology
- Native and non-native species
- Ecosystems ecology
- Food chains and food webs
- Photosynthesis and the carbon cycle
- Water and nitrogen cycles
- The role of individual species
- Conservation biology & restoration ecology
- Forests and deforestation
- Habitat fragmentation
- Overexploitation
- Endangered species
- Human population growth
- Agriculture practices
- World nutrition
- Agriculture impacts
- Fertilizers and pesticides
- Solid and hazardous waste
- Water, water supply, water availability
- Water Pollution
- Efforts to address water pollution in the United States
- Urban sprawl in the US
- Addressing urban sprawl
- Population growth solutions
- Human impacts & solutions
- Air pollution
- Impacts of air pollution
- Indoor air pollution
- Efforts to address air pollution
- Energy
- Non-renewable energy
- Renewable energy
- Efforts to address energy issues
- Climate change
- Causes of climate change
- Impacts of climate change
- Efforts to address climate change
- Environmental policy
- Risk
- Sustainability and solutions
- Looking forward
- The future

## **GRADING**

This is a pass/fail course. Students are required to complete all 10 formative and 4 summative assessments with an overall course average of 70% or better.