
Course Learning Outcomes

- 1 : Describe basic scientific concepts critical to the study of environmental science.
- 2 : Conduct standard environmental science tests (e.g. water, soil, and air quality tests) incorporating best practice laboratory skills (e.g. attention to detail, precise mathematical calculations, concise writing).
- 3 : Formulate science-based positions on contemporary environmental issues considering multiple standpoints.
- 4 : Evaluate changes (personal, commercial, and governmental) that would enhance personal and societal wellness and global sustainability.

Program Affiliation

for the following program(s)

This course is required as a core program course in the following program(s)

- AS Environmental Studies
 - AAS Fish and Wildlife Technology
 - AAS Horticulture
 - AAS Natural Resources Conservation
 - Natural Resources Conservation Certificate / v7 Certificate of Science Natural Resources Conservation / Florida Environmental Science
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VIII. Climate change

- Factors that govern global climate patterns
- Geologic record of climate
- The greenhouse effect
- Impacts of climate change
- Responses to climate change: mitigation and adaptation

IX. Nuclear power

- How nuclear power works
- History of nuclear power
- Evaluation of positive and negative socio-environmental impacts of nuclear energy

X. Renewable energy

- Different forms (solar, wind, water, geothermal, biomass, etc)
- Evaluation of positive and negative socio-environmental impacts of each form
- Reaching a sustainable energy future

XI. Sustainability

- Unifying root cause of all environmental issues: Population and consumption (case study: Easter Island)
- Stewardship, sound science, and sustainability
- What does a sustainable future look like?
- Solutions that are economically feasible, socially desirable, and ecologically viable solutions
- Individual responsibility and public policy
- Local and global communities

Laboratory topics to be covered include, but are not limited to:

- Lab safety and technical writing
- Toxicology - lethal dosage (LD50)
- Standard water quality tests (e.g. field sampling techniques, dissolved oxygen, microorganisms, biotic index-macroinvertebrate sampling)
- Standard soil sample tests (e.g. microorganisms, pH, texture, % organic matter, electric charge, nutrient levels)
- Tour of wastewater treatment plant
- Boat trip on Canandaigua Lake
- Energy consumption using kilowatt meters
- Air pollution calculations
- Analysis of current climate change data and evaluation of potential solutions