Critical Thinking in Environmental Science Course

PRACTICAL EXAMPLES
Explore contemporary issues and challenges related to the environment by using critical and creative thinking to understand, formulate, or apply ethical responses.

Synthesize environmental issue by understand and applying the scientific method, hypothesis formation and testing.

Demonstrate critical thinking skills in relation to environmental affairs.

Communicate ideas clearly in verbal and written modes as appropriate for public or professional science audiences, by referring to professional resources.

Demonstrate an ability to integrate the many disciplines and fields that intersect with environmental concerns.

CT² outcomes will be evident in students written papers, group and class discussions, and in final project as described in the tentative course schedule.
Course Outcomes & Examples

Outcome: Explore contemporary issues and challenges related to the environment by using critical and creative thinking to understand, formulate, or apply ethical responses.

Example: The Greenhouse Effect
Understanding: (PHET Simulation)
Applying ethical responses:
https://www.sciencedaily.com/releases/2017/04/170425102529.htm

If you are the CEO of a company that creates solar panels using this technology, what are some of the challenges that you might face while marketing this technology, how would you overcome these challenges?
Outcome: analyze how core science is involved in understanding environmental problems.

Course Outcomes & Examples
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Outcome: Analyze how social factors can lead to environmental controversies

Example: Tragedy of the commons

Environmental Ethics

Anthropocentric ethics
- Intrinsic value—humans only
- Instrumental value—everything else that helps humans

Biocentric ethics
- Intrinsic value—all living things

Ecocentric ethics
- Intrinsic value—communities and ecosystems

A more specific example!
Applying Ethical Responses

Each group will be assigned an ethical perspective (Anthropocentrism, Biocentrism, Ecocentrism) and each group should defend that worldview in a class discussion.

https://www.uvu.edu/ethics/docs/resources/japanese-whaling-case-study.pdf#search=Japanese%20whaling
Course Outcomes & Examples

**Outcome:** Demonstrate critical thinking skills in relation to environmental affairs

**Example:** Will Saving poor Children Lead to Overpopulation? (video)
https://www.gapminder.org/answers/will-saving-poor-children-lead-to-overpopulation/
Putting it all together...

Communicate ideas clearly in verbal and written modes as appropriate for public or professional science audiences, by referring to professional resources.

- Final project (group)
  - Identify an environmental problem and relate to the following aspects:
    - Social/societal (sociology, anthropology majors?)
    - Business/economic (business majors?)
    - Health (biology, pre-med, bioengineering majors...?)
    - Ecological (biology, environmental science majors...?)
    - Legal (criminal justice majors...?)
    - Political (political science majors...?)
  - Short-, and long-term effects
- Final Paper (Individual)
Questions?