



# Critical Thinking in Environmental Science Course

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PRACTICAL EXAMPLES

# ENSP 2000 - CT<sup>2</sup> LEARNING OUTCOMES

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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.



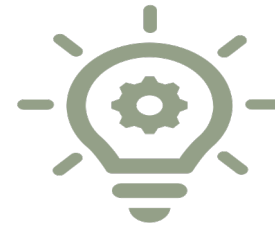
***CT<sup>2</sup> outcomes will be evident in students written papers, group and class discussions, and in final project as described in the tentative course schedule.***

# Course Outcomes & Examples

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**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**

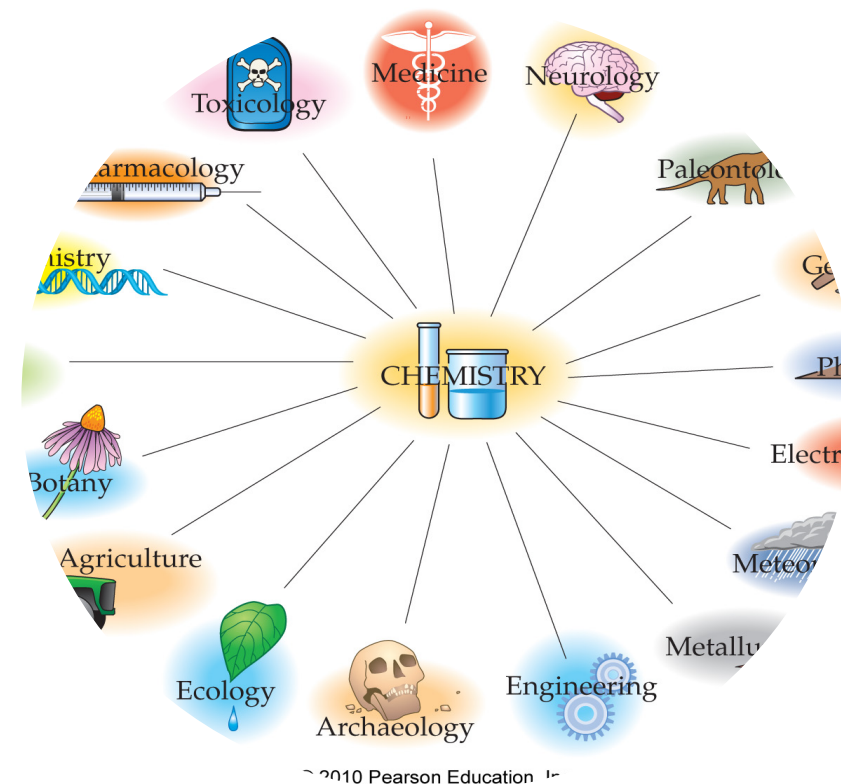
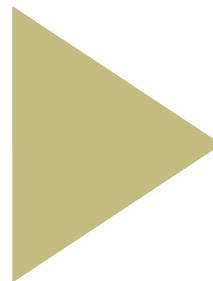
Understanding : (PHET Simulation)

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

# Course Outcomes & Examples

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**Outcome : Analyze how social factors can lead to environmental controversies**



**Example: Tragedy of the commons**

<https://www.washingtonpost.com/posteverything/wp/2015/07/20/why-i-give-my-students-a-tragedy-of-the-commons-extra-credit-challenge/>



## 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

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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

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**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...

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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?

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