

PHYS 101 Energy and Our Environment - Modification to meet the new Liberal Studies curriculum

I. CATALOG DESCRIPTION

PHYS 101 Energy and Our Environment

3c-0l-3cr

An overview of the areas of energy, transportation, and pollution. These topics are approached via the relevant concepts of physical science and physics. A non-laboratory course for Liberal Studies requirements.

Course Syllabus

II. COURSE OBJECTIVES

Students will:

Objective 1:

Discuss issues associated with specific energy sources and their effect on the environment.

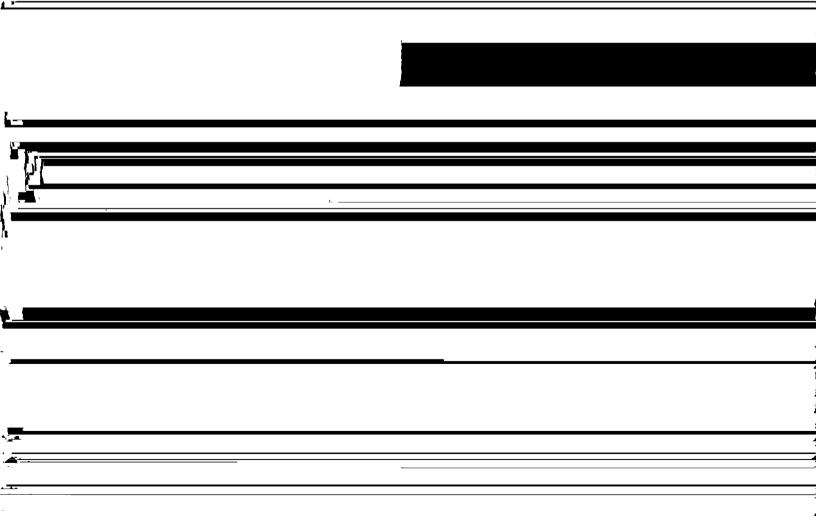
EUSLO 1:

Informed Learners

Rationale:

Review of articles as well as homework assignments will highlight important environmental issues.

Students will describe these issues in written reviews as well as written homework assignments. Students

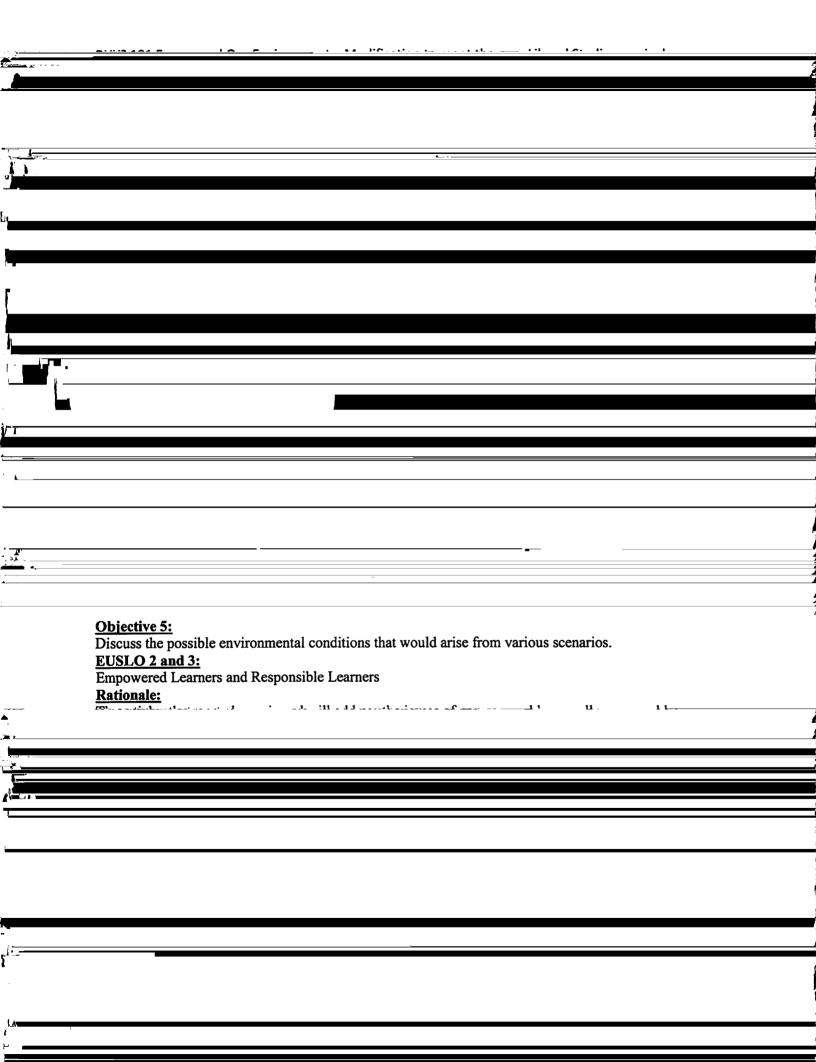


the field of energy. Knowledge of energy use and production makes a learner informed.

Objective 2:

Relate physics concepts to environmental issues

EUSLO 1 and 2:



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- 4. Waste Storage
- 5. Coal fired power plants
- 6. Relative Risks

F. Alternate Energy Sources

(4 hours)

- 1. Solar
 - a. domestic applications
 - b. large systems / electricity
- 2. Hydroelectric
- 3. Wind
- 4. Ocean / Tides
- 5. Geothermal
- 6. Storage of energy

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- 2. Efficiency of appliances
- 3. Waste heat recovery
- 4. Recycling / Waste disposal/Incineration
- H. Plant and Food Production

(4 hours)

- 1. Photosynthesis
- 2. Feeding the world's population
- 3. Fuel from Biomass
- I. Transportation

(4 hours)

- 1. System needs: fuels, people, and freight
- 2. System efficiencies: routing, mass transit
- 3. Trucking, railroads, and air transport
- J. Production of Land, Air, and Water pollutants and their Effect (4 hours)
 - 1. Carbon Monoxide
 - 2. Nitrous oxide
 - 3. Photochemical smog
 - 4 C. Le ... 2:--:12.

5. Carbon dioxide

6. Global warming

V. GRADING SCALE

A: \geq 90% B: 80-89% C: 70-79% D: 60-69% F: <60%

VI. ATTENDANCE POLICY

Course attendance policy will be consistent with the Undergraduate Attendance Policy in the IUP Undergraduate Catalog.

Energy: Its Use and the Environment, 5th Edition, Roger A. Hinrichs - State University of New York,

VII. REQUIRED TEXTBOOKS, SUPPLEMENTAL BOOKS AND READINGS

Text Book

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	PHYS 101 Energy and Our Environment – Modification to meet the new Liberal Studies curriculum
	Troy, Austin <u>The Very Hungry City: Urban Energy Efficiency and the Economic Fate of Cities</u> (2014) Yale University Press
	Malfaga Diahand Engum Environment and Climate (2011) W. W. Norton & Comment
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	Overview of changes from original syllabus of record – updating to new curriculum The only simificant change for this class is rewriting the objectives to be student centered and manning
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Liberal Studies Course Approval Checklist Instruction Sheet

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elephone 357-5715	
This checklist is intended to	o assist you in developing your course to meet IUP's Criteria for Liberal
Studies and to arrange your	proposal in a standard order for consideration by the Liberal Studies
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