

Course-Level Sustainability Learning Outcomes

AUTC 2250 Transportation Alternative Fuels

Learning Outcomes:

1. Describe the history of petrochemical-based transportation in The United States.
2. Describe the environmental impact of petrochemical-based transportation.
3. Describe the issues relating to U. S. dependence on foreign sources of oil.
4. Describe the efforts to legislatively address air quality and oil consumption at the federal, state and local levels.
5. Define the term, alternative Fuel.
6. Describe the production, handling, infrastructure requirements, advantages, and disadvantages of each of the following transportation fuel options:
7. Gaseous fuels (LPG and Natural Gas).
8. Alcohol and synthetic fuels.
9. Biodiesel fuels.
10. Dedicated electric vehicles.
11. Hybrid electric vehicles.
12. Hydrogen-powered vehicles.
13. Discuss the appropriateness of pursuing alternative power for transportation as a national agenda.
14. Fuel cell vehicles.
15. Describe the near-term actions that must occur to support an alternative power agenda within The United States and globally.
16. Describe the issues relating to the present and future global oil supplies.

BA 2284 STRATEGIC MANAGEMENT

Learning Outcomes:

1. Explain the strategic management process.
2. Describe the importance of business ethics in strategic management
3. Describe strategic mission and vision and their value.
4. Define sustained competitive advantage.
5. Explain the advantages and disadvantages of entering global markets.
6. Identify key sources of external information
7. Describe the internal environment and the integration of strategy and organizational culture.
8. Explain the differences among business strategies.
9. Define cooperatives strategies and explain why firms use them.
10. Define organizational structure and governance. Describe the different levels of strategies.

11. Describe strategic management in nonprofit, government, and small organizations.
12. Describe the 21st century competitive landscape and the role of sustainability, globalization and technology.
13. Prepare and present a written strategic management case analysis.

BIO 1110: Environmental Science

Outcome #1: Use the scientific method to solve hypothetical environmental problems.

1. Identify and describe the steps of the scientific method and give examples of each step for hypothetical environmental problems.
2. Describe how to use the scientific method to determine cause and effect relationships in environmental issues.
3. Describe how use of the scientific method could change the way man responds to environmental problems.
4. Discuss other factors besides scientific principles which should be considered when solving environmental problems.

Outcome #2: Evaluate the components of the biosphere.

1. Describe the components of the biosphere.
2. Explain the relationships of food and energy for the biosphere components.
3. Explain the pathways of relevant chemical elements through the components of the biosphere (Biogeochemical Cycles).
4. Explain the relationship of the Law of the Conservation of Matter and the pathways of chemical elements through the biosphere.

Outcome #3: Apply the major principles of ecology to environmental issues.

1. Explain the relationship of issues related to resource use to the Law of Conservation of Matter and Biogeochemical Cycles.
2. Diagram the pathway of energy through the biosphere (Laws of Thermodynamics).
3. Explain the relationship of the Laws of Thermodynamics to issues related to energy and resource use.

Outcome #4: Explain man's impact on the ecological characteristics of the biosphere.

1. Formulate ecological solutions to the problems discussed in class.
2. Discuss solutions to energy and materials shortages.
3. Discuss solutions to soil depletion and agricultural production.
4. Discuss solutions to forestry problems.
5. Discuss solutions to land and water pollution.

BIO 1192 Environmental Science Lab

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BIO 2410: Ecology and Evolution and BIO 2492 Ecology and Evolution Laboratory

Outcome #9: Examine the basic principles of ecology.

1. Describe the interactions between organisms and their environment and how that makes the distribution of species.
2. Explore the scope of ecological research from organismal to global ecology.
3. Link ecology and evolutionary biology.
4. Describe both biotic and abiotic limiting factors of ecosystems.
5. Compare terrestrial and aquatic biomes and their specific defining characteristics.

Outcome #10: Investigate the genetic basis of behavior.

1. Describe how discreet sensory inputs can stimulate both simple and complex behaviors.
2. Describe how learning establishes specific links between experience and behavior.
3. Describe how both genetic make-up and environment contribute to development of behaviors.
4. Discuss altruistic behavior in the context of inclusive fitness.

Outcome #11: Describe the ecology of populations.

1. Explain why population density, dispersion, and demographics are influenced by dynamic biological processes.
2. Describe the research that demonstrates population dynamics.
3. Relate the effects of natural selection to population dynamics.
4. List the factors that regulate population growth.
5. Explain why human population can be said to have experienced ecological release.

Outcome #12: Describe communities.

1. Diagram the trophic levels of given communities.
2. Describe how dominant and keystone species influence community structure.
3. Contrast bottom-up and top-down controls on ecosystem structure.
4. Examine how species diversity and composition relates to resilience in ecosystems.
5. Describe ecological succession.

Outcome #13: Examine energy flow and nutrient cycling in ecosystems.

1. Examine the physical laws that govern energy flow and chemical cycling in ecosystems.
2. Discuss the global energy budget.
3. Relate primary productivity to the health of terrestrial ecosystems.
4. Examine the water cycle, the carbon cycle, the terrestrial nitrogen cycle, and the phosphorus cycle.
5. Contrast decomposition rates of various ecosystem types.
6. Discuss how human activities now dominate most chemical cycles on earth.

ECON 2203 Society and the Environment**Learning outcomes:**

1. Describe historical patterns and trends of resource use and pollution creation for the US and the world.
2. Apply the concept of environmental externalities to a variety of real world situations. Analyze specific examples of pollution and evaluate policies aimed at reducing pollution.
3. Compare and contrast different policies for pollution reduction, including taxes, tradable permit systems, and direct regulatory approaches, with respect to both costs and effectiveness.
4. Identify common property resources and use information on extraction costs and

- market demand to predict outcomes and devise policies to improve outcomes.
5. Describe the scientific evidence of climate change, summarize current global and national climate change policies and evaluate proposed policies with respect to effectiveness and cost.
 6. Study one environmental issue in depth, applying a variety of the tools developed in this class to explaining the issue. Produce a written research paper.

GEOG 1102: Human Geography

Learning Outcomes:

1. investigate the basic concepts of human geography
2. identify spatial distribution of cultural characteristics and use them to analyze world problems such as ethnic and political conflict, urbanization, development, population, migration, and resource issues.

HT 1101: INTRODUCTION TO TOURISM

Learning Outcomes:

1. Research the different types and availability of prospective careers in the tourism industry.
2. Summarize the history and evolution of hospitality and tourism.
3. Describe the importance of segmenting the tourism market.
4. Evaluate and analyze quality customer services.
5. Examine ethics in the hospitality industry.
6. Identify the role of transportation in the hospitality industry.
7. Describe the impact of airline deregulation on the hospitality and tourism industry.
8. Identify and describe the major classifications of accommodations.
9. Compare and contrast organizational structures of hospitality organizations including the brigade system.
10. Analyze the various operations in the food and beverage sector.
11. Examine the importance of the menu, production and service in food and beverage operations.
12. Evaluate the economic impact of casinos, convention centers, events, entertainment and attractions.
13. Illustrate the similarities and differences between resorts, destinations and cruises.
14. Identify organizations that promote tourism.
15. Analyze the economic and political impact of tourism.
16. Analyze the social and cultural impact of tourism.
17. Describe emerging trends and technology that will impact the future of hospitality and tourism.

18. Differentiate between mass tourism and ecotourism.

NS 2010: Natural Science for Teachers

Learning Outcomes:

1. Examine major water issues.
2. Identify specific types of water pollutants.
3. Discuss water cycle.
4. Contrast different methods of water conservation.
5. Determine the relationships between components of an ecosystem.
6. Identify components to an ecosystem.
7. Discuss possible disturbances and their causes in an ecosystem.
8. Review the meaning of j-curves and s-curves in animal populations.
9. Analyze problems in food supply issues.
10. Explain the green revolution.
11. Identify food supply issues and their underlying causes.
12. Discuss issues of pesticides and herbicides in the environment.
13. Identify problems in modern day agriculture.
14. Contrast productive and unproductive soils.
15. Examine differences in human population between the developing versus the developed world.
16. List underlying factors that influence family size.
17. Identify possible solutions to growing populations.
18. Discuss ecological footprint in the developing versus the developed world.
19. Contrast solutions to ecosystem degradation and human consumption.
20. Contrast solutions to urban sprawl.
21. Identify origins of urban sprawl.
22. Define sustainability.
23. Discuss the five principles of sustainability.
24. Distinguish between Neolithic, industrial, and environmental revolutions.
25. Identify environmental impacts of urban sprawl.
26. Contrast global solutions to the energy crisis.
27. Cite differences between renewable and non-renewable energy sources.
28. Identify origins of fossil fuels.
29. Discuss human interest in fossil fuels from a historical perspective.

30. Identify origins of renewable energy sources.
31. Discuss human interest in renewable energy.
32. Examine different solutions for addressing the global decline in biodiversity.
33. Define biodiversity.
34. Differentiate between instrumental value and intrinsic value of species.
35. Identify reasons for decline in biodiversity.

PHIL 2246: ENVIRONMENTAL ETHICS

Learning Outcomes:

1. [Instructors can add to this list of objectives. Effective course objectives are measurable by the means of assessment stipulated in the next section.]
2. Apply different moral theories to the issues covered in the course
3. Learn techniques for moral decision-making in problematic situations
4. Critique positions and arguments in contemporary environmental debates
5. Learn the factual-scientific basis of contemporary environmental problems