

ITT Technical Institute
EG481
Environmental Issues
Onsite Course

SYLLABUS

Credit hours: 4

Contact/Instructional hours: 40 (40 Theory Hours)

Prerequisite(s) and/or Corequisite(s):

Prerequisites: EG371 Research Methods or equivalent, An introductory level Social Science course

Course Description:

This course offers an integrative approach to global, environmental issues. Topics of study include the analysis of environmental challenges confronting contemporary, global society against a political, geographical, cultural and economical backdrop. Students are instructed on how to apply a systematic problem solving approach in reviewing the issues, related policies and recommendations for confronting these challenges.

SYLLABUS

Instructor: _____

Office hours: _____

Class hours: _____

Major Instructional Areas

1. Foundations of Environmental Science
2. Environmental Issues of 21st Century
3. Science Behind the Issues
4. Creating a Sustainable Future

Course Objectives

1. Explain the basic elements of environmental science.
2. Analyze the role of culture, economics, and politics in shaping environmental issues.
3. Examine the importance of biodiversity for ecosystem health.
4. Explain the fundamental concepts of population ecology.
5. Evaluate the impact of various agricultural practices on human health and the environment.
6. Critically evaluate how various land uses affect biodiversity and human health.
7. Evaluate the ill effects of toxins on human health and the environment.
8. Analyze the importance of freshwater and marine resources to ecosystems, human health, and economics.
9. Analyze global climate change and its effect on the environment.
10. Analyze the impact of various energy sources and consumption levels on human lives and the environment.
11. Use the ITT Tech Virtual Library to research concepts of environmental challenges confronting contemporary society.

Related SCANS Objectives

1. Identifies and acquires the information from the existing sources.
2. Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.
3. Records information completely and accurately.
4. Explains how social, organizational, and technological systems work in the environment.
5. Monitors and distinguishes trends, predicts impacts on environment.
6. Suggests modifications to existing processes and proposes new or alternative processes.
7. Communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies.
8. Works toward agreements involving exchange of resources, resolves divergent interests.
9. Recognizes challenges with natural resources and suggest appropriate allocation, substitution and conservation strategies.

10. Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative.
11. Monitors and budgets time to accomplish required task.
12. Recognizes impact of personal habits on the environment and develops personal ecological strategies.

Teaching Strategies

The key focus of this course is to make the students aware of the importance and the impact of various environmental issues. The course makes use of real life scenarios in class-activities, discussions, writing assignments, and a project to enable the students relate to and understand the environmental issues. The project uses the social science problem solving method to instill a systematic approach to problems and issues.

The overall assessment strategy for this course includes writing assignments, participation, quiz, and a project that runs throughout the course.

Course Resources

Student Textbook Package

- Withgott, Jay H. and Scott R. Brennan. *Essential Environment: The Science Behind the Stories*. 4th edition. San Francisco, CA: Benjamin Cummings, 2012.

References and Resources

ITT Tech Virtual Library

Log on to the ITT Tech Virtual Library at (<https://studentportal.itt-tech.edu>) to access online books, journals, and other reference resources selected to support the ITT Tech curricula.

■ General References

• Books

The following books are related to this course and are available on the ITT Tech Virtual Library:

Basic Search

- Nature's experts science, politics, and the environment [electronic resource] Stephen Bocking
- Cahill, Michael. *The Environment and Social Policy*. New York: Routledge, 2001.
- Kutting, Gabriela. *Environment, Society and International Relations: Towards More Effective International Environmental Agreements*. New York: Routledge, 2000.
- Leautier, Frannie. *Cities in a Globalizing World: Governance, Performance, and Sustainability*. Washington DC: World Bank, 2006.
- National Research Council Staff. *Envisioning the Agenda for Water Resources Research in the Twenty-First Century*. Washington DC: National Academies Press, 2001.
- Sampson, Gary P. and Bradnee W. Chalmers. *Trade, Environment, and the Millennium*. Tokyo: United Nations University Press, 2002.
- Shapiro, Susan G. *Environment and Our Global Community*. NY: International Debate Education Association, 2005.
 - Gambini, Barbara. "Cultural Assumptions against Sustainability: An International Survey." *Journal of Geography in Higher Education* 30, no. 2 (July 2006):
 - Woodin, Michael and Caroline Lucas. "Green alternatives to globalisation a manifesto." London ; Sterling, Va. Pluto Press, 2004.
 - Lewis, Alastair C., Nicola Carslaw, Philip J. Marriott, Russel M. Kinghorn, Paul Morrison, Andrew L. Lee, Keith D. Bartle, and Michael J. Pilling. "A Larger Pool of Ozone-Forming Carbon Compounds in Urban Atmospheres." *Nature* 405, no. 6788 (June 15, 2000):

- Purdum, Traci. "Sustaining the Future." Special Leadership Report. *Industry Week/W* 254, no. 13 (December 2005):
- Advanced Search
 - Shi, David. "Sustainability as a Strategic Initiative." *Presidency* 9, no. 1 (Winter 2006):
 - Spooner, John. "Ecological Footprints." *Times Educational Supplement* no. 4652, Special Section (September 16, 2005):

You may refer Appendix V for an exhaustive list of full text electronic versions of relevant periodicals available through the ITT Tech Virtual Library.

- **Other Resources**

**School of Study > General Education Information > Recommended Links >
>Environment**

- *U.S. Environmental Protection Agency*
A comprehensive environmental site offering news and research information

All links to Web references outside of the ITT Tech Virtual Library are always subject to change without prior notice.

Evaluation & Grading

COURSE REQUIREMENTS

1. Attendance and Participation

Regular attendance and participation are essential for satisfactory progress in this course.

2. Completed Assignments

Each student is responsible for completing all assignments on time.

3. Team Participation (if applicable)

Each student is responsible for participating in team assignments and for completing the delegated task. Each team member must honestly evaluate the contributions by all members of their respective teams.

Evaluation Criteria Table

The final grade will be based on the following weighted categories:

CATEGORY	WEIGHT
Participation	10%
Writing Assignments	55%
Project Part 1	3%
Project Part 2	7%
Project Part 3	5%
Project Part 4	10%
Quizzes	10%
Total	100%

Grade Conversion Table

Final grades will be calculated from the percentages earned in class as follows:

Grade	Percentage	Credit
A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5
D	60–64%	1.0
F	<60%	0.0

Course Outline

- **Unit 1:** All the concepts will be covered in the class; therefore, the specified readings are merely for your reference.
- **For all units, except unit 1:** It is recommended that you complete the readings before attending the class.
- The Participation evaluation category will be graded based on general class participation and graded in-class activities.”

Unit #	Activities for the unit
1 Introduction to Environmental Science	<ul style="list-style-type: none"> • Content Covered <ul style="list-style-type: none"> ○ Chapter 1, “Science and Sustainability: An Introduction to Environmental Science,” pp. 1–11 • Writing Assignment: 1 • Project: Part 1 Introduction
2 Culture, Economics, and the Environment	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 1, “Science and Sustainability: An Introduction to Environmental Science,” pp. 3–5 and 11–18 ○ Chapter 5, “Environmental Economics and Environmental Policy,” pp. 87–96 • Writing Assignment: 1
3 Environmental Policy	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 5, “Environmental Economics and Environmental Policy,” pp. 96–110 • Writing Assignment: 1 • Quiz: 1 • Project: Part 1 Submission
4 Ecology and Biodiversity	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 3, “Evolution, Biodiversity, and Population Ecology,” pp. 44–60 ○ Chapter 4, “Species Interactions and Community Ecology,” pp. 63–85 ○ Chapter 6, “Human Population,” pp. 112–120 ○ Chapter 8, “Biodiversity and Conservation Biology,” pp. 160–182 • Writing Assignment: 1 • Project: Part 2 Introduction
5 Land Use	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 9, “Forests, Forest Management, and Protected Areas,” pp. 185–203 ○ Chapter 18, “The Urban Environment: Creating Sustainable Cities,” pp. 399–412 • Writing Assignments: 1
6 Agriculture	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 7, “Soils, Agriculture, and the Future of Food,” pp. 132–159 • Writing Assignment: 1 • Project: Part 2 Submission
7 Pollutions, Toxins, and Human Health	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 10, “Environmental Health and Toxicology,” pp. 205–223 • Writing Assignment: 1 • Quiz: 1
8 Water, Marine, and Freshwater Resources	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 2, “Environmental Systems: Matter, Energy, and Ecosystems,” pp. 37–40 ○ Chapter 12, “Fresh Water, Oceans, and Coasts,” pp. 248–272 and 273–275 • Writing Assignment: 1 • Project: Part 3 Introduction
9 Global Climate Change	<ul style="list-style-type: none"> • Readings <ul style="list-style-type: none"> ○ Chapter 13, “Atmospheric Science and Air Pollution,” pp. 278–282 ○ Chapter 14, “Global Climate Change,” pp. 298–308 • Writing Assignment: 1 • Project: Part 3 Submission • Project: Part 4 Introduction

Unit #	Activities for the unit
10 Energy	<ul style="list-style-type: none">• Readings<ul style="list-style-type: none">○ Chapter 15, “Nonrenewable Energy Sources, Their Impacts, and Energy Conservation,” pp. 325–345○ Chapter 16, “Renewable Energy Alternatives,” pp. 355–377• Writing Assignment: 1
11 Project and Summary	<ul style="list-style-type: none">• Project: Part 4 Submission