

**EPS 202 SOCIETY, TECHNOLOGY, AND ENVIRONMENT**  
**NEW JERSEY INSTITUTE OF TECHNOLOGY**  
**Spring 2017**

**Lecture** Time: WF 1-2:25 PM  
Location: Tiernan Lecture Hall 1  
Moodle: <http://moodle.njit.edu>

**Instructor: Michael P. Bonchonsky**

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Office Hours: M 3-5 PM, W 10:30-11:30 and by appt

**I. Introduction and Objectives**

This course introduces students to the interdisciplinary field of environmental studies and explores the interrelationships between science, technology, environment, and society. We examine the social and scientific origins of environmental problems and evaluate the complex role of technology in creating and resolving these concerns. The perspective of the course is broadly social scientific, though this mode of investigation takes place against the background of a scientific appreciation of current environmental dilemmas. We will consider both the local and global implications of current social activities on the environment and investigate specific issues such as air pollution, water contamination, acid rain, ozone depletion, declining biodiversity, and climate change. Other topics include energy, food production, biotechnology, and the environmental implications of contemporary consumption practices.

**II. Required Reading**

Students in this course should obtain the following materials from the NJIT bookstore or through any of the commercial on-line dealers.

Thomas Easton, ed., Fifth edition, 2014, Classic Edition Sources Notable Selections in Environmental Studies, (in bookstore) *ISBN: 9781308081939*  
Stamford, CT: McGraw-Hill.

The assigned readings are designed to give you background knowledge needed to understand the subject matter covered in class. The readings listed for each topic should be read prior to the class. The more you are able to read the better prepared you will be for class discussions.

Readings will be supplemented with handouts and journal articles that will be available on Moodle.

### III. Evaluation

The final course grade will be determined as follows:

| <b>Final Grade</b> | <b>Overall Academic Performance (100%)</b> |
|--------------------|--|
| A                  | Above 90                                   |
| B+                 | 85-89                                      |
| B                  | 80-84                                      |
| C+                 | 75-79                                      |
| C                  | 70-74                                      |
| D                  | 60-69                                      |
| F                  | Below 60                                   |

The evaluation of student performance in this course is based on five components:

- 1. Midterm examination (25%):** There will be a midterm exam comprised of multiple-choice or short-answer questions and brief essays. This exam will be based on course lectures, discussion sessions, and assigned readings. The midterm is scheduled on October 28.
- 2. Final examination (25%):** There will be a final exam conducted during the end-of-semester exam period. The format of the final exam will be the same as the midterm exam; it will be based only on course material covered during the second half of the semester.
- 3. Class participation (10%):** Students are expected to attend all lectures and attendance will be taken at each session. You will be required to sign a daily attendance sheet and late arrival (more than fifteen minutes) will be treated as an absence. Each student will however be granted two “free absences” during the semester.
- 4. Quiz (20%):** A quiz will be given in class every Wednesday to assess your familiarity with the weekly lectures and the required readings. There will be no make-up quizzes or late submission under any circumstances. I will drop two lowest grades in calculating your final scores. Be aware: Academic Honor Code is applied.
- 5. Writing Assignments (20%):** Two research papers will be required during the semester. Schedule for the assignments will be determined at the start of the semester (see the schedule TBD on Moodle). Instructions for the assignment will be posted on the Moodle prior to deadlines. All completed assignments must be submitted in class at the start of class on the day of the deadline.
- 6. Extra Credit – environmental news bonus work (up to 5 pts):** You need to research one piece of environmental news and write down your comments (reaction) in a paragraph. You are required to submit 3-7 pieces of your work (attaching your news) **spread throughout the semester** – recommend: one piece every other week.

#### **IV. Important Notices**

1. Students enrolled in this course are forewarned that the consequences of plagiarism or academic misconduct of any kind are severe. Violations will be handled in accordance with the rules outlined in the NJIT Student Handbook (current edition). If you are unfamiliar with these procedures, you should consult the appropriate section of this governing manual.
2. Please arrive to class with the expectation that you will need to remain in place for the scheduled time period. Please be advised that you are not depart the classroom in the middle of a session...for any reason.
3. **All cellular phones must be turned off during class.**
4. Final grades are not subject to post-semester adjustment—with the exception of the amendment of a grading error. Under no circumstances will students be given the opportunity to complete extra-credit papers or other assignments to bolster their final grades.

#### **V. Schedule**

##### **January 18, 20: Introduction**

Course outline and synopsis

Syllabus (Moodle) Study Guide (Moodle)

Discussion: Cancer Cure, a case study (posted, read before class)

##### **January 25, 27: Worldviews and the Environment**

Vitousek, "Human Domination of Earth's Ecosystems," Sources, pp. 33-40

Meadows, et al, "From Limits to Growth: the 30-year Update," Sources

Diamond, "A Tale of Two Farms," Sources

Media: The Environment: A Historical Perspective

##### **February 1, 3: Origins of Environmentalism**

Carson, "Silent Spring," (Moodle)

Shabecoff, "The Environmental Revolution" A Fierce Green Fire (Moodle)

Hardin, "The Tragedy of the Commons," Sources

Media: Silent Spring

##### **February 8, 10: Wilderness**

Muir, "The Mountains of California,"

Pinchot, "The Fight for Conservation," Sources,

Leopold, "A Sand County Almanac....," Sources

Marsh, "From Man and Nature", Sources

Media: Wilderness idea

##### **February 15, 17: Toxics and Risk in the Environment**

Paigen, "Controversy at Love Canal," Sources

Steingraber, "Living Downstream: An Ecologist Looks at Cancer and the Environment," Sources,

Colborn, et al, "Our Stolen Future," Sources      Media: Love Canal

##### **First Writing Assignment Due**

**February 22, 24: Environmental Health and Water Resources (Quiz 4)**

Palmer, et al, "Restoring Rivers," Sources

Media: "Tapped"

**March 1, 2: Chemical and Manufacturing Industries: Can They Ever be Green?**

McDonough, "Cradle-to-cradle design: creating healthy emissions – a strategy for eco-effective product and system design," (Moodle)

Media: The Next Industrial Revolution (Cradle to Cradle)

**March 8, 10: Review and Midterm Exam****Spring Break March 11-18****March 22, 24: Energy Policy and Global Impacts**

National Energy Policy Development Group, "Reliable, Affordable, and Environmentally Sound Energy for America's Future" (available at <http://www.whitehouse.gov/energy/>)

Lovins, "From 'More Profit with less Carbon'" Sources

Flavin and Dunn, "Reinventing the Energy System," Sources

Media: The Big Energy Gamble (California State experience) (PBS)

**- Last day to withdraw (check registrar's academic calendar).**

**March 29, 31: Climate Change and International Agreements: Kyoto Protocols**

The Intergovernmental Panel on Climate Change, "Climate Change 2007," Sources  
Skolnikoff, E.B. 1999. The role of science in policy: The climate change debate in the United States. (Moodle)

Media: Global Warming

**Second Writing Assignment, see moodle****April 5, 7: Population Growth**

Ehrlich, "The Population Explosion..." Sources

Cohen, "How Many People Can the Earth Support," Sources

Media: The World in Balance

**April 12, 14: Food Production**

Berry, "The Unsettling of America: Culture and Agriculture," Sources

Brown, "Food Scarcity: An Environmental Wake-Up Call," Sources

Media: Food, Inc.

**April 19, 21: Sustainable Development and Consumption**

World Commission on Environment and Development, "Our Common Future," Sources, pp. 198-202

Annan, K. 2002. Sustaining the Earth. Environment, 42(8), 10pp. (Moodle)

Mabogunje, A.L. 2002. Poverty and environmental degradation: challenges within the global economy. Environment, 44(1), 11pp. (Moodle)

Kates, R.W. 2000. Population and consumption: what we know, what we need to know. Environment, 42(3), 10pp. (Moodle)

Media: Plastics

**April 26, 28; Biodiversity, Biotechnology and Species Conservation and review for Final**

Wilson, "The Current State of Biological Diversity," Sources

Shiva, "Women's Indigenous Knowledge and Biodiversity Conservation," Sources.

Vandermeer, "Rethinking Rain Forest: Biodiversity and Social Justice," Sources.

Ruastiala, K. and D.G. Victor. 1996. Biodiversity since Rio: the future of the Convention on Biological Diversity. *Environment*, 388(4): 17-20+37 (Moodle)

Media: Crash: A Tale of Two Species

**May 3 Review...Final Exam period begins Friday May 5 ...as Scheduled during exam week see Registrar posting**

**Learning Outcomes:**

1. To develop students' sensibility to contemporary environmental/ecological problems and their roots and causes.
2. To enhance students' understanding of the complex and dynamic interactions among science, technology, environment and society.
3. To build up students' ecological citizenship with the social responsibility to develop solutions to contemporary environmental problems from personal, professional and societal perspectives.
4. To empower students with critical thinking skills and knowledge of sustainability, to effectively engage in community development and pursue successful careers in science, technology and engineering.
5. To nurture students' environmental entrepreneurship spirit in tackling the contemporary environmental problems with development and application of innovative science, technology and engineering practices.