

**SOCIETY, TECHNOLOGY, AND ENVIRONMENT (EPS 202)-SECTION H01 - HONORS  
NEW JERSEY INSTITUTE OF TECHNOLOGY  
Fall 2017**

Instructor: Prof. Nicholas M. D'Ambrosio, GISP  
Location: CKB 317  
Time: Wednesdays, 1800 – 2105 Hours (6:00 – 9:05 pm)  
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## **1. Introduction**

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. This course is expected to achieve the following learning objectives/outcomes:

- To enhance students' understanding of the complex and dynamic interrelationships between science, technology, environment and society.
- To empower students with critical thinking skills and knowledge of sustainability needed to pursue successful careers in science, technology and engineering.
- To develop students' sensibility to the contemporary environmental/ecological problems such as climate change, water and air pollution, and loss of biodiversity and their sources and causes.
- To establish students' social responsibility of solving the contemporary environmental problems from personal, professional and societal perspectives.
- To nurture students' environmental entrepreneurship spirit in tackling the contemporary environmental problems with development and application of innovative science, technology and engineering practices.

## **2. 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. 2014. *Classical Edition Sources: Environmental Studies*, Fifth Edition. New York, NY: McGraw-Hill. ISBN-10: 1308081936; ISBN-13: 9781308081939.

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 are to be read prior to the class date.** The more you are able to read the better prepared you will be for class discussions, thus reading ahead is encouraged.

### 3. Evaluation

(Subject to change at instructor discretion during course run due to internal material review)

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

- **Weekly post-class quizzes and Assignments (10%):** Regularly, there will be a short quiz or assignment after the class to assess your understanding of the topic that was lectured and discussed. The quizzes will be available every Thursday at 9:00 AM (unless otherwise specified in the schedule) until 9:00 AM on the following Wednesday in the course website in MOODLE. **No late submission is allowed and accepted for any reasons. Any missing assignment or quiz will be given a score of zero.**
- **Class participation (15%):** Students are expected to attend all lectures and attendance will be taken at each session. You will be required to sign an attendance sheet and late arrival and early departure (more than fifteen minutes) will be treated as an absence. **You will be assessed each session based on your active participation in class activities and discussions. As a part of class participation, you are required to read each week's assigned readings before class for discussion.**
- **Lab assignments (10%):** Students are expected to participate in all lab assignments that will you to gain an interactive understanding of the topic that is being depicted. You will be assessed in each lab assignment based on your participation within each activity and answers to subsequent questions about the lab assignment. Any section of the lab not completed during class time is to be completed as homework.
- **Research paper (10%):** Students are expected to complete one research paper on any topic related to the course. This will be an opportunity to demonstrate your critical thinking/analysis abilities and an opportunity to apply the topics discussed throughout this semester onto a real-world situation. The minimum length of the research paper will be five pages, though you are encouraged to write as much as necessary to convey the point. The paper must be double-spaced, contain one-inch margin, and have Times New Roman 12 font. **Late submissions will be deducted 5% for each day after the deadline.**
- **Honors Individual/Group Project (15%):** The group or individual project will be assigned in which students are to seek out a local environmental-related entity (non-profit/government/citizen activist, private business, etc.) that they find most engaging. Identify the mission of your chosen organization, visit their facility, meet with personnel, sit in on open to the public speaking engagements or meetings, and bring that information back to the class in the form of a brief end of semester presentation. This is an open assignment, you may work together or work alone, and grades will be assigned based on the thoroughness and creativity of the presentation on the organization selected. The objective of this assignment is to connect you, the student in academia, to the outside professional world. A list of suggestions can be discussed in class.

- **Midterm examination (20%):** There will be a midterm exam comprised of multiple-choice, definition and short-answer questions. This exam will be based on course lectures, discussion sessions, video/movies and assigned readings for the class. It will be an open book and open note exam, so bring your materials. Hard copy only, digital books and notes will NOT be permitted.
- **Final examination (20%):** A final exam will be conducted following the final exam schedule 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 after the midterm. It will be an open book and open note exam, so bring your materials. Hard copy only, digital books and notes will NOT be permitted.
- Letter grade will be based on the following scale: A: above 90%; B+: 85-90%; B: 80–85%; C+: 75-80%; C: 70-75%; D: 60-70% and F: below 60%.

#### 4. Important Notices

- 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.
- It is also strongly preferred that you not depart the classroom in the middle of a session...for any reason. Please arrive to class with the expectation that you will need to remain in place for the scheduled time period.
- All computers, cellular telephones and pagers must be turned off during class. Students with ringing phones will be required to leave for the entire class session.

#### 5. Schedule

(Subject to change at instructor discretion during course run due to internal material review)

*All readings listed are due the day below which they are listed, EXCEPT the first day of class*

#### September 6: Introduction

- Wallace-Wells, “The Uninhabitable Earth,” *The New York Magazine* – pp. 24-31

Video: The Environment

Week 1 Assignment: Read the provide article above and provide a short summary of the issue at hand. In addition, select a section from the reading and provide personal insight to the specific problem present.

Open at 9:00am on September 7

Due by 9:00am on September 13



## **October 11: Population**

- Attenborough, “This Heaving Planet,” *Sources* – pp. 202-206
- Collins, “The Morality of Population Control,” *Sources* – pp. 207-208
- Pimentel et al., “Will Limited Land, Water, and Energy Control Human Population Numbers in the Future,” *Sources* – pp. 209-213

Case Study: The City & The End of Suburbia

Lab Assignment: Population Growth

Week 6 Post-class Assignment: Open at 9:00am on October 12  
Due by 9:00am on October 18

## **October 18: Food and Agriculture**

- Brown, “Can Food Shortages Bring Down Civilization”, *Sources* – pp. 158-162
- Fedoroff, “Radically Rethinking Agriculture for the 21<sup>st</sup> Century”, *Sources* – pp. 163-166
- Aher, Swami and Sengupta, “Organic Agriculture: Way Towards Sustainable Development,” *Sources* – pp. 167-170
- Shiva, Lockhart and Shroff, “The Law of the Seed,” *Sources* – pp. 171-173

Video: Food, Inc – To Be Viewed at home as part of the homework assignment

Lab Assignment: Tragedy of the Commons

Week 7 Post-class Quiz: Open at 9:00am on October 19  
Due by 9:00am on October 25

## **October 25: Midterm Exam**

### **November 1: Environmental Pollution – Possible Class to be Held Remotely Due to Previously Scheduled Conflict – To Be Determined**

- Evelyn, “Fumifugium: or the Inconvenience of the Aer and Smoake of London Dissipated,” *Sources* – pp. 127-129.
- Marsa, “Fracking Nation,” *Sources* – pp. 130-133
- Bullard, “Environmental Justice for All,” *Sources* – pp. 191-194

Video: Living Downstream

Week 8 Post-class Quiz: Open at 9:00am on November 2  
Due by 9:00am on November 8

## **November 8: Biodiversity**

- Secretariate of the Convention on Biological Diversity, “Executive Summary from Secretariate of the Convention on Biological Diversity,” *Sources – pp. 110-114*
- Coll et al., “Ecosystem Overfishing in the Ocean,” *Sources – pp. 115-118*
- Turner et al., “Global Biodiversity Conservation and the Alleviation of Poverty,” *Sources – pp. 119-123*
- Swift et al., “Wildlife Trade and the Emergence of Infectious Diseases,” *Sources – pp. 124-126*

Video: Crash: A Tale of Two Species

Week 9 Post-class Quiz:           Open at 9:00am on November 9  
  Due by 9:00am on November 15

## **November 15: Energy**

- Juday, “The Annual Energy Budget of an Inland Lake,” *Sources – pp. 82-86*
- Fowler, “Energy and the Environment,” *Sources – pp. 87-90*
- Zencey, “Energy as Master Resource,” *Sources – pp. 91-96*
- Jacobson and Delucchi, “A Path to Sustainable Energy by 2030,” *Sources – pp. 97-100*

Video: Gasland

Week 10 Post-class Quiz:           Open at 9:00am on November 16  
  Due by 9:00am on November 22

## **November 22: Friday Classes Meet—No Class**

## **November 29: Climate Change**

- The Intergovernmental Panel on Climate Change, “Summary for Policymakers: Climate Change 2007: the Physical Science Basis,” *Sources – pp. 139-147*
- Directorate of Global Energy Economics of the International Energy Agency, “Redrawing the Energy-Climate Map,” *Sources – pp. 148-150*
- Fischetti, “Storm of the Century: Every Two Years,” *Sources – pp. 151-156*

Video: An Inconvenient Truth

Week 11 Post-class Quiz:           Open at 9:00am on November 30  
  Due by 9:00am on December 6

## **December 6: Water**

### **In Class Presentations I**

Video: Flow: for the Love of Water

Week 12 Post-class Quiz:           Open at 9:00am on December 7  
  Due by 9:00am on December 13

**December 13: Synthesis**

**In Class Presentations II**

**Research Paper is due by 11:59pm on December 13**

**Final Exam as Scheduled during week of December 15-21**