

## Science and Technology and Environmental Problems

Spring 2012

Fridays: 10:45-12:15; Room: W9-407

Office hours: 10:00-10:40 on Fridays. Other times by appointment.

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With an emphasis on Japan, this seminar course intends to offer a survey of major environmental problems in the 20th century, while tracing the growth of environmental awareness and environmentalism worldwide. It will highlight the relationship between environmental degradation and technological and industrial development, and the threat to the environment and public health by big businesses. The topics include industrial pollution, toxic chemicals, nuclear tests and disasters, global warming and nuclear energy. It will focus on four major topics: the issues and debates surrounding the methyl mercury poisoning of Minamata (and other industrial pollution related diseases) in Japan and Rachel Carson's *Silent Spring* (1962) in the US, both of which played a crucial role in shaping the global environmental consciousness, environmental movement and environmental policies. It will also look at the debate over global warming and nuclear energy –via the ongoing catastrophe involving the Fukushima Dai-ichi nuclear power plant– and how they are reshaping our environmental thinking and politics

The course hopes to raise awareness of growing environmental problems associated with science and technology, and give students opportunity to explore and assess these problems critically and from multiple angles. It also aims to help students improve their conversational and writing skills.

**Format:** This course is conducted in a seminar format and in English. Class attendance and participation in discussions are essential. Students are expected to: (1) read the assigned reading or view the assigned audio-visual material prior to the class; (2) participate in classroom discussions; (3) write short papers, and (4) attend possible field trips (voluntary).

### Reading List:

- Jun Ui (ed.), *Industrial Pollution in Japan*, 1992.
- Rachel Carson, *Silent Spring*, 1962.
- Alex MacGillivray, *Rachel Carson's Silent Spring*, 2004.
- Lynn White, jr., "Historical Roots of Our Ecologic Crisis," *Science* **155** (1967): 1203-7
- Keibo Oiwa & Masato Ogata, (translated by Karen Colligan-Taylor), *Rowing the Eternal Sea: the Story of a Minamata Fisherman*, 2001.
- Akio Mishima, *Bitter Sea: The Human Cost of Minamata Disease* (Tokyo: Kosei, 1992)

- Marla Cone, *Silent Snow: the Slow Poisoning of the Arctic*, 2005
- Jeffrey Broadbent, *Environmental Politics in Japan: Networks of Power and Protest*, 1999.
- Robert Bud et al, *Inventing the Modern World: Technology since 1750*, 2000
- Sharon B. McGrayne, *Prometheans in the Lab*, 2001.
- Istvan and Magdolna Hargittai, *Candid Science*, 2002.
- James Lovelock, *The Revenge of Gaia*, 2006.
- David Nye, *Technology Matters*, 2006.

#### **Audio-visual material:**

- Endangered Planet 1950-95 (1999)
- Japan's Lessons on Economy and Environment (...)
- Rachel Carson's Silent Spring [video-recording], writer and producer, Neil Goodwin, PBS Video, 1999, (60 minutes).
- Global Warming and the Greenhouse Effect
- Al Gore, Inconvenient Truth (2006)

#### **OUTLINE:**

**Week 1** (April 13<sup>th</sup>): Introduction

**Week 2** (April 20<sup>nd</sup>): Science, technology and the environment –overview Endangered Planet (video + discussion)

**Week 3** (April 27<sup>th</sup>): Growth and the environment in Japan (video + discussion)

+ An introduction to writing essays

**No class on Friday, May 4<sup>th</sup>** (Greenery Day)

**Week 4** (May 11<sup>th</sup>): Minamata I (video + discussion)

**Week 5** (16<sup>th</sup> **Wednesday**): Minamata II (discussion+ *Rowing the Eternal Sea*)

**No class on Friday, May 18<sup>th</sup>** (for Suzukake Festival)

**Week 6** (May 25<sup>th</sup>): Other major pollution cases in Japan: Itai-itai

**Week 7** (June 1<sup>st</sup>): DDT (pesticides) (*Prometheans in the Lab*: Chapter 8) (reading + discussion)

**Week 8** (June 8<sup>th</sup>): Rachel Carson's *Silent Spring* (video + reading)

**Week 9** (June 15<sup>th</sup>): Lynn White, "Our Ecologic Crisis"; David Nye, chapter 6.

**Week 10** (June 22<sup>nd</sup>): Nuclear Energy I (Excursion to the Daigo Fukuryū Maru)

**Week 11** (June 29<sup>th</sup>): Nuclear Energy II (Into Eternity) (video + discussion)

**Week 12** (July 6<sup>st</sup>): Fukushima dai-ichi and its local and global implications (video + discussion)

**Week 13** (July 13<sup>th</sup>): Global warming I: (Gore's *Inconvenient Truth* + discussion)

**Week 14** (July 17<sup>th</sup> **Tuesday**): Global warming II; James Lovelock, *The revenge of Gaia* (reading + discussion)

**Week 15** (July 20<sup>th</sup>): Mini presentations for a term paper