

67020

History of Science and Technology and Environmental Problems

Spring Semester (2-0-0)

Prof. Masanori KAJI

I. Outline/Course Description

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, including cadmium poisoning or itai-itai disease) in Japan and Rachel Carson's *Silent Spring* (1962) in the US, both of which played a crucial role in shaping global environmental consciousness, environmental movement and environmental policies. It will also look at ongoing debates over global warming and nuclear energy and how they are reshaping our environmental thinking and policies. The recent catastrophe at the Fukushima Dai-ichi nuclear power plant is another main topic.

Objectives/Aims: The course hopes to raise student's awareness of growing environmental problems associated with science and technology, and to give them an opportunity to explore and assess these problems critically and from multiple angles. It also aims to help them to improve their conversational and writing skills.

III. 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) do a mini-presentation; (4) write short papers, and (5) attend possible field trips (voluntary).

IV. 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.
- Brett L. Walker, *Toxic Archipelago: A History of Industrial Disease in Japan*, 2010.
- Masanori Kaji, "Role of experts and public participation in pollution control: the case of itai-itai disease in Japan, " *Ethics in Science and Environmental Politics*, **12** (2012): 99-111.
- Masanori Kaji, "Itai-itai Disease: Lessons for the Way to Environmental Regeneration" *Lessons From Fukushima: Japanese Case Studies on Science, Technology and Society*, ed. Yuko Fujigaki, Springer International Publishing AG Switzerland, 2015, pp.141-165.
- Robert Bud et al, *Inventing the Modern World: Technology since 1750*, 2000.
- Sharon B. McGrayne, *Prometheans in the Lab*, 2001.
- Brett L. Walker, *Toxic Archipelago: A History of Industrial Disease in Japan*, 2010.
- James Lovelock, *The Revenge of Gaia*, 2006.
- David Nye, *Technology Matters*, 2006

V. Audiovisual materials list

- People's Century: Endangered Planet (1999) 60 minutes
- Japan's Lessons on Economy and the environment – Our Pollution Experience (1996) 29 minutes
- Message from Minamata (1976) by Noriaki Tsuchimoto 45 minutes
- American Experience: Rachel Carson's *Silent Spring* (1993) PBS (Public Broadcasting Service) 60 minutes
- Into Eternity (2010) by Michael Madson 75 minutes
- Inside Japan's Nuclear Meltdown (2012) PBS Frontline 55 minutes
- An Inconvenient Truth (2006) by Davis Guggenheim 100 minutes