



**United Nations University – Institute for the Advanced Study of Sustainability**  
**Postgraduate Programme 2019-2020**  
**Autum 2021 Semester Course**

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**Title of Course: Environmental Science for Sustainability (ESS)**

**Coordinators: Dr. Kensuke Fukushi and**

**Course Schedule: Every Tuesday 14:00-15:30**

Version: August 17, 2021

**Overview:**

This lecture provides a basic understanding of environmental science, especially global environmental science. Lectures cover wide areas of environmental issues including climate change, water, solid wastes, air pollution, land-use, agriculture, energy, and biodiversity and natural resources. One important aspect of this lecture is to provide interrelationships between various issues listed above.

This lecture is conducted in accordance with the textbook. Group discussions and debates will be conducted in 14<sup>th</sup> and 15<sup>th</sup> lectures. This lecture is intended for students who have not taken environmental science courses at the undergraduate program.

**Learning Outcomes:**

- Basic understanding of various areas of science and their interrelationship.
- Reading ability for most of general scientific journal papers (Nature, Science etc.).

**Outline**

Lecture	Date	Content	Assignment	Instructor
Lecture 1	Tue 6 Oct, 2021	Introduction of sustainable environment		K. Fukushi
Lecture 2	Tue 13 Oct, 2021	Environmental Ethics		K. Fukushi
Lecture 3	Tue 20 Oct, 2021	Risk, Economics, and Environmental Concerns		K. Fukushi
Lecture 4	Tue 27 Oct, 2021	Kind of Ecosystems and Communities		K. Fukushi
Lecture 5	Tue 3 Nov, 2021	Populations: Characteristics and Issues		K. Fukushi
Lecture 6	Tue 10 Nov, 2021	Energy and Civilization		K. Fukushi
Lecture 7	Tue 17 Nov, 2021	Nonrenewable/Renewable energy sources		K. Fukushi
Lecture 8	Tue 24 Nov, 2021	Biodiversity issues		K. Fukushi
Lecture 9	Tue 1 Dec, 2021	Land-use Planning		K. Fukushi

Lecture	Date	Content	Assignment	Instructor
Lecture 10	Tue 5 Jan, 2021	Soil and its uses		K. Fukushi
Lecture 11	Tue 12 Jan, 2021	Agricultural Methods and Pest Management		K. Fukushi
Lecture 12	Tue 19 Jan, 2021	Water Management		K. Fukushi
Lecture 13	Tue 26 Jan, 2021	Air Quality Issues		K. Fukushi
Lecture 14	Tue 2 Feb, 2021	Debate (TBD)		K. Fukushi
Lecture 15	Tue 9 Feb, 2021	Final Exam		K. Fukushi

**Assessments:**

- Attendance and class participation:
  - 10%
- Assignment (once):
  - 30%
- Final Exam (Take-home examination) :
  - 60% (70% class attendance is compulsory to take the final exam)

**Textbook:**

Environmental Science (15th Ed) by Enger/Smith, McGraw-Hill, • ASIN : B078SPQ8DC (Kindle version: 3967yen at Amazon)