



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

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

**Coordinators: Dr. Kensuke Fukushi**

**Course Schedule: October 2020 to February 2021**

Version: August 30, 2020

**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, landuse, 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 | Tuesday<br>6 Oct 2020  | Introduction of sustainable environment      |            | K. Fukushi |
| Lecture 2 | Tuesday<br>13 Oct 2020 | Environmental Ethics                         |            | K. Fukushi |
| Lecture 3 | Tuesday<br>20 Oct 2020 | Risk, Economics, and Environmental Comncerns |            | K. Fukushi |
| Lecture 4 | Tuesday<br>27 Oct 2020 | Kind of Ecosystemes and Communities          |            | K. Fukushi |
| Lecture 5 | Tuesday<br>3 Nov 2020  | Populations: Characteris and Issues          |            | K. Fukushi |
| Lecture 6 | Tuesday<br>10 Nov 2020 | Energy and Civilization                      |            | K. Fukushi |
| Lecture 7 | Tuesday<br>17 Nov 2020 | Nonrenewable/Renewable energy sources        |            | K. Fukushi |
| Lecture 8 | Tuesday<br>24 Nov 2020 | Biodiversity issues                          |            | K. Fukushi |
| Lecture 9 | Tuesday<br>1 Dec 2020  | Land-use Planning                            |            | K. Fukushi |

| Lecture    | Date                   | Content                                  | Assignment | Instructor |
|------------|------------------------|------------------------------------------|------------|------------|
| Lecture 10 | Tuesday<br>8 Dec 2020  | Soil and its uses                        |            | K. Fukushi |
| Lecture 11 | Tuesday<br>15 Dec 2020 | Agricultural Methods and Pest Management |            | K. Fukushi |
| Lecture 12 | Tuesday<br>5 Jan 2021  | Water Management                         |            | K. Fukushi |
| Lecture 13 | Tuesday<br>12 Jan 2021 | Air Quality Issues                       |            | K. Fukushi |
| Lecture 14 | Tuesday<br>19 Jan 2021 | Debate (TBD)                             |            | K. Fukushi |
| Lecture 15 | Tuesday<br>26 Jan 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)