# Energy and Environmental Engineering

2 units (selection)

Yoshiyuki Kidoguchi · Professor / Resource Circulatory Engineering, Ecosystem Engineering, Earth and Life Environmental Engineering

**Target**⟩ This class addresses to understand characteristics and background of the global warming problem and the depletion of energy resources for effective utilization system of energy resources.

**Outline**⟩ Lecture on fossil fuels resources, environmental pollutant and environmental loading, principal of thermal energy conversion and conversion technology, nuclear energy and thermal reactor, the renewable energy and waste energy systems.

***Keyword***⟩ ***environmental problem, energy security, global warming, energy conversion***

**Requirement**⟩ None

**Notice**⟩ Basic subjects concerning the engineering

**Goal**⟩ To understand characteristics and background of the global warming problem and the depletion of energy resources, and to master the ability solving the energy security on the point of engineering field.

**Schedule**⟩

1. Energy Fundamentals
2. Pollution of the Atmosphere
3. Principal of Thermal Energy Conversion
4. Thermal Energy Conversion System
5. Fossil Fuels Coal, Petroleum and Natural Gas
6. Combustion Method and System of Fossil Fuels
7. Hydroelectric and Thermal Power Generation
8. Nuclear Energy
9. Introduction of New Energy
10. Geothermal Energy System
11. Wind Energy and Solar Energy SystemSystem
12. Fuel Cell
13. Biomass Energy System
14. Wastes Energy System
15. Hydrogen Energy System

**Evaluation Criteria**⟩ Grading with attitude for lecture and some reports. Need to obtain 60 points out of 100 points for passing this lecture. Every lesson is planed to attain the targets of this lecture. Students' achievement of the targets is partly accessed by the reports.

**Textbook**⟩ Energy Environment

**Reference**⟩ To be intriduced in the class

**Webpage**⟩ http://www.eco.tokushima-u.ac.jp/w3/miwa/index.html

**Contents**⟩ http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216566

**Student**⟩ Able to be taken by only specified class(es)

**Contact**⟩

⇒ Kidoguchi (Eco502, +81-88-656-9633, kidog@eco.tokushima-u.ac.jp) Mail
(Office Hour: 随時)