

Advanced Environmental Technology on Chemistry

2 units (selection)

Teacher of course

Target The present situation and subjects on chemistry in view of environmental pollution will be introduced. Recent development in chemistry to attempt to solve those subjects will be explained.

Outline Based on the historical background on environmental pollution, the recent progress on analytical chemistry, biochemistry, catalysis and chemical process engineering for environmental protection will be explained.

Style Lecture and exercise

Keyword *environment, analytical chemistry, biochemistry, catalyst, chemical process*

Fundamental Lecture “Advanced Analytical and Environmental Chemistry” (1.0), “Advanced Physical Chemistry” (1.0), “Advanced Materials Science” (1.0)

Relational Lecture “Engineering of Biological Environment” (0.5), “Advanced Environmental Systems Engineering” (0.5)

Requirement Requires undergraduate level knowledge of chemistry and chemical engineering.

Goal

1. To understand the present situation for environmental subjects on engineering.
2. To develop ability for solving the environmental subjects.

Schedule

1. Endocrine disrupters
2. Microwave dielectric heating: Its application to chemical reaction
3. Environmental problem and crystal growth
4. Analysis of trace elements
5. Properties of supercritical fluids and their utilization
6. Recent advances in organic chemistry: Synthesis and Function
7. The mystery of natural rubber
8. Asymmetric synthesis
9. Polymer materials and environment
10. Biodegradable polymer
11. Introduction to engineering utilization of space environment
12. Utilization of adsorption phenomena
13. Approach using apatite to studies on energy and environment

14. Present situation of phosphors for white LEDs

15. Optimization of chemical processes

Evaluation Criteria Assignments count 100% mainly based on the presentation and report submitted.

Textbook To be announced in the class.

Reference To be announced in the class.

Contents <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216581>

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

Contact

⇒ Committee Member of School Affair