

# Microorganism utilization

Special Subjects  
Elective 2 credit

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## 1. Course Description

The lectures explain processed foods, functional foods, agrochemicals, and industrial enzymes that utilize the functionalities of microorganisms, and additionally describe research papers, patents, and industrial research in the field (DP3, DP4).

## 2. Course Objectives

The aims of the lectures are to understand processed food, functional foods, agrochemicals, and industrial enzymes that utilize the functionalities of microorganisms, and improve knowledge related to the research papers and patents.

## 3. Grading Policy

Grading is determined comprehensively with the final report, the reading comprehension, and the content of discussion.

## 4. Textbook and Reference

Textbook

The lectures are conducted using English research papers and handouts.

## 5. Requirements(Assignments)

The lecture is delivered on the basis of fundamental knowledge of fundamental microbiology and applied microbiology. Please read and study English research papers beforehand that were previously handed out (1 hour). After the lecture, please find new information on your interested fields using books or internet (1 hour).

## 6. Note

## 7. Schedule

- [1] Lecture guidance, Microorganism utilization overview
- [2] Industrial use of food enzymes (1) : Brewer's enzyme
- [3] Industrial use of food enzymes (2) : Enzyme for prevention of starch retrograding
- [4] Industrial use of food enzymes (3) : Enzyme for fructooligosaccharide production
- [5] Industrial use of food enzymes (4) : Enzyme for trehalose production
- [6] Agricultural use of microorganism (1) : Evaluation of agrochemicals
- [7] Agricultural use of microorganism (2) : Search for agrochemicals
- [8] Agricultural use of microorganism (3) : Discussion on agrochemicals
- [9] Industrial use of detergent enzymes (1) : Overview of detergent enzymes
- [10] Industrial use of detergent enzymes (2) : Study on detergent enzymes
- [11] Industrial use of detergent enzymes (3) : Patent
- [12] Industrial use of detergent enzymes (4) : Academic paper①
- [13] Industrial use of detergent enzymes (5) : Academic paper②
- [14] Industrial use of detergent enzymes (6) : Discussion on detergent enzymes
- [15] Add-up and report submission