Module Code	19349035	Course Term
Course Subject Name	**Bio-Engineering 1**	Spring The 6th Semester
Course Tutor	**Jiro Nakayama**	
Credit	1	Taught Day
Schools	School of Agriculture	FRI-1
Taught Year	The 3rd year	
Campus	Ito campus	
Subject Area	Lecture	
Course Subject Classification	Specialized Subjects	Friday, 1st period (8:40-10:10)
Course Requirements		
Course Requirement (Pre-requisite)	Students are requested to take the following subject; Microbiology, Food Science, and Molecular Biology.	

Course Outline

Bio-Engineering is a developing and growing subject based on the results of bioscience. This course focuses on enzymes and food processing, biotechnology in food safety, inactivation of microorganisms, microbial secondary metabolites, microbial genetics, enzyme engineering, environment engineering, plant biotechnology, and fermentation engineering. Students learn the important aspects of Bio-engineering.

key words

Biotechnology, Food processing, Applied micorobiology, Enzyme engineering, Plant biotechnology

Study Objectives (General)

This course is designed to let students be aware of the fundamentals and the current developments of Bio-Engineering.

Study Objectives (Specific) The course aims to achieve the following:

Course Plan

May 8: Nakayama・Zendo : Introduction & Mirobial engineering and control (1)
May 15: Igura: Food and beverage fermentations
May 22: Miyamoto: Biotechnology in food safety
May 29: Doi: Plasmid biology and application
June 5: Fujino: The Biology of extremophiles (1)
June 12: Honjoh: (1) Plant biotechnology for utilization as food
June 19: Masuda: Antibiotic resistance and Persister cells (1)

Course Approaches	
Textbooks	
Reference Books	
Study consultation (office hour)	Office: 648 Office Hours: 16.30-17.30 (Jiro Nakayama) Email: nakayama@agr.kyushu-u.ac.jp Phone: 092-802-4736
Exams/Results Evaluation Method	1. Attendance, in-class activities and others (50 %) 2. Exam or Report (50%)
Others	