

# Fundamental Biosciences

# Experiments

in Syllabus Number

5E179

Special Subjects  
Elective 1 credit

Each Staff

## 1. Course Description

In this course, we will hold 6 themed experiments and one calculation exercise. In the first lesson, we will provide guidance regarding the experiment (experimental approach, safety, experimental ethics, etc.).

## 2. Course Objectives

By learning this course, you can make sure the knowledge learned in the lecture through experiments. In addition, you can master basic operations common to the more specialized "bio experiment" through 6 courses, data processing, how to summarize reports, and more.

## 3. Grading Policy

Since this course is an experimental subject, it is necessary to attend and experiment, then submit a report for each subject. Evaluation will be made based on the reports submitted for each experiment and sum them up as the final evaluation.

## 4. Textbook and Reference

Textbook

Textbook : We will distribute dedicated experiment manuals for each course.

Kagaku Dojin (ed.) Guidebook for safely carrying out experiments in bioscience (ISBN978-4-7598-1921-2) Kagaku Dojin

Kimura M. Simulated anatomy using a paper frog model (ISBN978-4-410-28377-2) Suken Shuppan

## 5. Requirements(Assignments)

(1) Since we will distribute experiment manuals before starting practical training, please prepare and go through experiments. Also, unlike the classroom lecture, the experiment involves danger. Please take precaution while paying attention to where dangers are hiding and the way to avoid danger.

(2) After completing the experiment, have the experiment report summarized each time.

## 6. Note

Since this course also serves as a master of basic operation leading to 6 course of "Biotechnology Experiment"(required compulsory courses), we recommend that you take classes as much as possible. The manuals to be distributed will be useful in other bio experiments and graduation studies, so please use it even after the experiments.

Applicants who wish to attend must attend the first lecture that also serves as guidance.

Please prepare laboratory white clothes, name tags, experiment notes by yourself. White coats are also sold at the campus store (Kinokuniya Book Center).

## 7. Schedule

Guidance (including general safety education of experiments, safety guidelines for genetic recombination experiments, ethical education for animal experiments, etc.)

Simulated anatomy using a paper frog model & anatomy using a bullfrog

Observation using a microscope

Extraction of DNA

Gel electrophoresis

Preparation of buffer solution and measurement of pH

Separation by TLC

Scientific calculation exercises