

Biology 2

Syllabus Number 5A106
Basic Major Subjects
Requisites 2 credit
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1. Course Description

This course is an introductory lecture which is the basis for studying life science at university. The two major topics to be discussed are (1) the diversity and uniformity of life, and (2) the basic unit of life "cells". In this course, we will also refer to (3) the relationship between biology and other fields.

2. Course Objectives

By learning this course, you will be able to master the fundamentals of modern life science from the viewpoint of molecular biology and acquire basic knowledge that leads to learning specialized subjects.

3. Grading Policy

- (1) The enrollment qualification for final exams shall be at least 2/3 attendance.
- (2) Half of the term exam questions will be selected from the exercises in the textbook chapters. The other half will be a description problem.
- (3) The final grade is calculated by adding the evaluation of the short report to the result of the final exam. That proportion will be 70 points for the exam and 30 points for the report point.

4. Textbook and Reference

Textbook

Shinji Uemura (translated) Cain Basic Biology (ISBN978-4-8079-0770-0) Tokyo Kagaku Dojin

5. Requirements(Assignments)

Students should prepare by using textbooks and come to the lecture. In addition, students are expected to deepen their understanding by practicing problems at the end of each chapter of the textbook after the classes. Part of the problems of regular exams will be taken from the practice in the textbook. Examples of answers to the problems are listed at the end of the textbook, so you can check your degree of comprehension by yourselves.

6. Note

This course uses Part I and Part II of the designated textbook.

7. Schedule

- [1] Course guidance (how to learn biology at university)
- [2] Chapter 1: Life and natural science
- [3] Chapter 2: Tree of life
- [4] Chapter 3: Biological classification
- [5] Special Topics (1): Creatures and mathematics
- [6] Chapter 4: Substances that make up life forms
- [7] Chapter 5: Cell structure
- [8] Chapter 6: Material transport and signaling
- [9] Special Topics (2): Creatures and space / earth science
- [10] Chapter 7: Energy and enzyme
- [11] Chapter 8: Photosynthesis and cellular respiration
- [12] Special Topics (3): Creatures and physics / chemistry
- [13] Chapter 9: Cell division
- [14] Special Topics (4): Cancer and cell division
- [15] Summary and Exam