Advanced Course in Cell Biology

Lecture Academic year 1,2 credits 1

[Keywords] Cell-, tissue-, organ-, and individual-hierarchy, intravital enzymatic reaction, protein production, multicellular organisms

[Academics] Futoshi Nakazawa

[Course aims]
Cell biology is an academic discipline that has evolved from biology. In this field, we study cell, which is the basic system of life, by applying molecular biology and biology techniques. Additionally, cell biology is related to molecular biology, genetics, anatomy, and physiology, and is inseparable from these other academic fields.
In this course, students will learn about cell-, tissue-, organ-, and individual-hierarchy and intravital enzymatic reactions, which are more effective than chemical reactions. Moreover, students will learn about cell types and structures, differentiation and commonality of cells, vital reactions at cellular and individual levels, diversity of cells, and homeostasis in the living body.

[Course objectives]
The goals of this course are for the student to be able to:
1. Explain the structure and functions of the cell
2. Explain the diversity and relativity of reactions in cells
3. Explain the role of cells in protein production
4. Explain the interactions between various cells
5. Explain the functions of cells in multicellular living organisms
6. Explain variation and diversity in cells

[Course content]

Class	Theme	Content	Academics
1	Structures, functions, and biological reactions in cell-, tissue-, organ-, and individual-hierarchy		Futoshi Nakazawa
2	Analyses of sequences of genes, mutations, and functions of multiple reactions		Futoshi Nakazawa
3	Reading and presenting a cell biology reference		Futoshi Nakazawa
4	Literature survey, discussion, and presentation on a specific subject		Futoshi Nakazawa

[Grading policies]
Your overall grade in the class will be based on your class attendance and reports.

[Textbook]
Inform students about the textbooks that will be used.

[Reference book]
Same as above

[Preparation for course]
Students must understand the course objectives and prepare accordingly for the classes.