

Biomedical Science

(code: 6402 1st or 2nd year : 2 units)

Attendance hours	22.5
No attendance hours	7.5
Total hours	30

1. Instructor(s)

NIKAIDOU Itoshi E-mail: dritoshi@gmail.com

SASAGAWA Youhei, SATO Noriko, SHIBUYA Hiroshi, GOTO Toshiyasu,

MASUTOMI Kenkichi, SHIMIZU Masahiro, NAKANISHI Akira, SEGAWA Katsumori,

NISHINA Hiroshi, KOFUJI Satoshi

2. Lecture place

Online (Zoom) or on-demand video lecture

3. Course Purpose and Outline

Course Purpose

The Bioscience Program offers lectures on several important topics in Molecular Biology, Genetics, Epigenetics, Bioinformatics, Developmental Biology and Engineering, Cell Biology and Biochemistry. The major purpose of the program is to obtain the latest information on these fields of science and to train scientific mind as well as logical thinking skills necessary to become independent researchers.

Outline

Molecular mechanisms on several fundamental biological phenomena related to embryonic development, cell differentiation and immune system are introduced and several human diseases due to breakdown of normal regulation, such as genomic imprinting diseases, cancers, immunodeficiency and allergy, will be discussed.

4. Course Objective(s)

Understand useful and critical information from basic to the latest biological sciences and medicine.

5. Lecture Style

Lecture by the lecturer, discussion with students, and writing reports.

6. Grading System

Attendance to lectures (80 %) and reports (20 %) are evaluated.

7. Exam eligibility

More than 75% of attendance to the lectures

8. Prerequisite Reading

Instruct at first lecture if necessary.

9. Reference Materials

Molecular cell biology / Harvey Lodish ... [et al.], Lodish, Harvey F., W.H. Freeman, 2016
Epigenetics / C. David Allis, Marie-Laure Caparros, Thomas Jenuwein, Danny Reinberg, editors ; Monika Lachner, associate editor, Allis, C. David, Caparros, Marie-Laure, Jenuwein, Thomas, Reinberg, Danny, Lachner, Monika, : Cold Spring Harbor Laboratory Press, 2015
Peter Parham, "The immune system" (Third edition), Garland Science
Molecular Cell Biology Eighth Edition, Harvey Lodish et al, ISBN-13: 978-1-4641-8339-3
Genome 4, Garland Science, 978-0815345084

10. Language used in class

The classes will be offered in English.

11. Office Hour

NIKAIDOU Itoshi: AM.9:00-10:00, Every Monday at 2458, M&D tower (or Zoom)

12. Note(s) to students

None

13. Schedule

No.	Date	Time	Theme	Staff
1	May 26	13:00-15:15	Bioinformatics for single-cell omics data	NIKAIDOU Itoshi
2	June 2	13:00-15:15	Single-cell omics sequencing	SASAGAWA Youhei
3	June 9	13:00-15:15	Intercellular Clearance System: Autophagy	YAMANO Koji
4	June 16	13:00-15:15	Cellular signaling in development	SHIBUYA Hiroshi, GOTO Toshiyasu
5	June 23	13:00-15:15	Telomere biology and carcinogenesis	MASUTOMI Kenkichi
6	June 30	13:00-15:15	Cellular signaling in diseases	SHIBUYA Hiroshi, SHIMIZU Masahiro
7	July 7	13:00-15:15	Molecular mechanisms of inhibition the development of hereditary Parkinson's disease	MATSUDA Noriyuki
8	July 14	13:00-15:15	Immune cells and cell death	SEGAWA Katsumori
9	August 25	13:00-15:15	Cancer metabolism	KOFUJI Satoshi
10	September 1	13:00-15:15	Liver formation and diseases	NISHINA Hiroshi