### Course title
Molecular and Cellular Biology II

### Term
通年 (前期開始) Whole Year

### Credit(s)
2

### School/Program
School of Life Science

### Department/Program
Common Subjects of Life Science

### Category
Common

### Lecturers

**Instructor**

Full name

* MAESHIMA KAZUHIRO

### Outline
Basic features of molecular and cellular biology will be lectured and discussed. These include regulation of transcription and translation, protein structure and function, post-translational modification, structure and dynamics of chromosome, structure and dynamics of cell, organelles and cytoskeleton, metabolism, protein traffic, signal transduction and cell imaging.

### Goal
1. Elucidation of biological phenomena in a molecular level
2. Understanding methods to analyze in a molecular level
3. Elucidation of biological phenomena in a cellular level
4. Understanding methods to analyze in a cellular level

### Grading system
01: Four-grade evaluation (A, B, C, D)

### Grading policy
The grades will be A, B, C, and D, which are determined by the quality of the paper, which must be submitted to the lecturer by the provided deadline. The subject(s) of the paper must be one of the four important aspects that are presented in the above Course Objectives.

### Lecture Plan

**2021**

May 14, 2021- February 4, 2022 13:30-15:10 on Fridays

May 14 Kazuhiro Maeshima, DNA and Structure of Chromosome
May 21 Yasuto Murayama, Partition of Chromosomes
May 28 Masato Kanemaki, Replication, Recombination and Repair of Chromosome
June 4 Koichi Kawakami, Transposable Element
June 11 Yuta Shimamoto, Structure and Function of Protein
June 18 Jun-ichi Nakayama, Regulation of Transcription
June 25 Nobuyuki Shiina, Regulation of Translation
July 2 Yoshihisa Oda, Cell Structure I
October 8 Shin-ya Miyagishima, Cell Structure II
October 15 Akatsuki Kimura, Cytoskeleton
October 22 Tomomi Tsubouchi, Cell Cycle and Cell Differentiation

**2022**

January 7 Shigenori Nonaka, Cilia and Flagella
January 14 Kazuhiro Aoki, Signal Transduction
January 21 Takashi Ueda, Intracellular Transport
January 28 Yoshiaki Kamada & Shoji Mano, Autophagy
February 4 Akira Yamashita, Meiosis

### Location
Oral and Zoom: Lecture Room (B202) or Seminar Room (B301), 2nd or 3rd floor of Library in the National Institute of Genetics / Seminar Room 4 (131) 1st floor in the National Institute for Basic Biology

### Language
English

### Textbooks and references
Molecular Biology of the Cell, B. Alberts et al., Garland Science.
| Others | It is desirable to have the basic knowledge corresponding to the lecture of Molecular and Cellular Biology I (E-learning), but it is not mandatory. It is given as an oral lecture, which will be provided in English. |