### Course Information

<table>
<thead>
<tr>
<th>Course Number</th>
<th>10SLS002</th>
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<tbody>
<tr>
<td>Course title</td>
<td>Molecular and Cellular Biology II</td>
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<tr>
<td>Coordinator</td>
<td>MAESHIMA Kazuhiro, MURAYAMA Yasuto, KANEMAKI Masato, ODA Yoshihisa, NAGAI Yasuke, NAGAI Nobuyuki, KAWAKAMI Koichi, MIYAGISHIMA Shin-ya, KIMURA Akatsuki, TSUBOCHI Tomomi, NONAKA Shigenori, YAMASHITA Akira, KAMADA Yoshiaki, NONAKA Shoji, AOKI Kazuhiro</td>
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<tr>
<td>Typical Subjects</td>
<td>School of Life Science &gt; subjects of Life Science &gt; Common</td>
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<td>Recommended grade</td>
<td>1, 2, 3, 4, 5</td>
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<tr>
<td>Period</td>
<td>All year</td>
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<td>Credit</td>
<td>2</td>
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### Course 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.

### Aim

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 Criteria

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 Aim.
May 17, 2019- February 7, 2020 13:30-15:10 on Fridays

May 17 Kazuhiro Maeshima, Structure of Chromosome
May 24 Yasuto Murayama, Partition of Chromosomes
June 7 Masato Kanemaki, Replication, Recombination and Repair of Chromosome
June 14 Yoshiiwa Oda, Cell Structure I
June 21 Yuta Shimamoto, Structure and Function of Proteins
June 28 Yusuke Miyanari, Regulation of Transcription
July 5 Nobuyuki Shiina, Regulation of Translation
July 12 Koichi Kawakami, Transposable Elements
October 18 Shin-ya Miyagishima, Cell Structure II
October 25 Akatsuki Kimura, Cytoskeletons
November 8 Tomomi Tsubouchi, Cell Cycle and Cell Differentiation
January 10 Shigenori Nonaka, Cilia and Flagella
January 17 Akira Yamashita, Meliosis
January 24 Takashi Ueda, Intracellular Transport
January 31 Yoshiaki Kamada & Shoji Mano, Autophagy
February 7 Kazuhiro Aoki, Signal Transduction

Location
Oral and TV: Seminar Room (B202), 2nd 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 Gene, J. D. Watson et al., CSHL Press.
Molecular Biology of the Cell, B. Alberts et al., Garland Science.
Genes, B. Lewin, Prentice Hall.
Introduction to Genetic Analysis, A. J. F. Griffiths et al., W H Freeman & Co.
The Cell Cycle, D. O. Morgan, Oxford University Press.

Related URL
URL:

Explanatory Note on above URL
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.