

## Syllabus Reference

Course title	Molecular and Cellular Biology 1		
Term	前期 1st Half		
Credit(s)	1		
The main day		The main period	
Program/Department	49 Genetics		
Lecturers			
成績評価区分 Grading Scale	A, B, C, Dの4段階評価 Four-grade evaluation		
レベル Level	Level 2		
力量 Competence	専門力 Academic expertise		

## Instructor

Full name

\* MAESHIMA KAZUHIRO

Outline	Basic features of molecular and cellular biology will be lectured and discussed. These include genome, regulation of transcription and translation, protein structure and function, post-translational modification, structure and dynamics of chromosome.
Learning objectives	1. Elucidation of biological phenomena at a molecular level 2. Understanding methods to analyze at a molecular level
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	April 25, 2025– June 6, 2025 13:30–15:10 on Fridays  2025 April 25 Kazuhiro Maeshima, DNA and Structure of Chromosome May 2 Yasuto Murayama, Partition of Chromosomes  May 9 Masato Kanemaki, Replication, Recombination and Repair of Chromosome May 16 Kazuhide Asakawa, Transposable Element May 23 Yuta Shimamoto, Structure and Function of Protein May 30 Jun-ichi Nakayama, Regulation of Transcription June 6 Nobuyuki Shiina, Regulation of Translation
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 Cell (7th eds), B. Alberts et al., W. W. Norton & Company. Lewin' s Genes XII, J.E. Krebs et al., Jones & Bartlett Learning
Notes for students of other programs	It is given as an oral lecture, which will be provided in English.
Contact for Course Inquiries	Lecturer(s): Contacts to the lecturer (e-mail address, Tel and Fax numbers, and the office): Professor Kazuhiro Maeshima (kmaeshim@nig.ac.jp, Tel 055-981-6864, NIG G208) Associate Professor Yasuto Murayama (ystmurayama@nig.ac.jp, Tel 055-981-6810, NIG C214) Associate Professor Kazuhide Asakawa (kasakawa@nig.ac.jp, Tel 055-981-6887, NIG C316) Professor Masato Kanemaki (mkanemaki@nig.ac.jp, Tel 055-981-5830, NIG C416) Associate Professor Yuta Shimamoto (yuta.shimamoto@nig.ac.jp, Tel 055-981-6784, NIG A211)  Professor Jun-ichi Nakayama (jnakayam@nibb.ac.jp, Tel 0564-55-7680, NIBB, Myodaiji 261) Associate Professor Nobuyuki Shiina (nshiina@nibb.ac.jp, Tel 0564-59-5846, ExCELLS & NIBB, Yamate 3-625)

## Syllabus Reference

Course title	Molecular and Cellular Biology 2		
Term	後期 2nd Half		
Credit(s)	1		
The main day		The main period	
Program/Department	49 Genetics		
Lecturers			
成績評価区分 Grading Scale	A, B, C, Dの4段階評価 Four-grade evaluation		
レベル Level	Level 2		
力量 Competence	専門力 Academic expertise		

Instructor
Full name
* MAESHIMA KAZUHIRO

Outline	Basic features of molecular and cellular biology will be lectured and discussed. These include dynamics of cell, organelles and cytoskeleton, metabolism, protein traffic, signal transduction and cell imaging.
Learning objectives	1. Elucidation of biological phenomena at a cellular level 2. Understanding methods to analyze at a cellular level
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	October 17, 2025– January 30, 2026 13:30–15:10 on Fridays  2025 October 17 Shin-ya Miyagishima, Cell Structure October 24 Akatsuki Kimura, Cytoskeleton October 31 Ken-ichi Suzuki, Cell Differentiation November 7 Shigenori Nonaka, Cilia and Flagella November 21 Shoji Mano, Organelle November 28 Yoshiaki Kamada, Signal Transduction  2026 January 16 Takashi Ueda, Intracellular Transport January 30 Mariko Sasaki, Meiosis  The schedule is subject to change depending on the instructor' s availability.
Location	Oral and Zoom: Lecture Room (B202) or Seminar Room (B301), 2nd or 3rd floor of Library in the National Institute of Genetics
Language	English
Textbooks and references	Molecular Biology of the Cell (7th eds), B. Alberts et al., W. W. Norton & Company. Lewin' s Genes XII, J.E. Krebs et al., Jones & Bartlett Learning
Notes for students of other programs	It is given as an oral lecture, which will be provided in English. The schedule is subject to change depending on the instructor' s availability.
Contact for Course Inquiries	Lecturer (s) : Contacts to the lecturer (e-mail address, Tel and Fax numbers, and the office) : Professor Kazuhiro Maeshima (kmaeshim@nig.ac.jp, Tel 055-981-6864, NIG G207) Professor Akatsuki Kimura (akkimura@nig.ac.jp, Tel 055-981-5854, NIG A321) Professor Shinya Miyagishima (smiyagis@nig.ac.jp, Tel 055-981-9411, NIG A325) Professor Takashi Ueda (tueda@nibb.ac.jp, Tel 0564-55-7530, NIBB, Myodaiji 201) Associate Professor Shigenori Nonaka (snonaka@nibb.ac.jp, Tel 0564-55-7590, ExCELLS & NIBB, Myodaiji G414) Associate Professor Shoji Mano (mano@nibb.ac.jp, Tel 0564-53-7500, NIBB, Myodaiji G514) Associate Professor Ken-ichi Suzuki (suzuk107@nibb.ac.jp, Tel 0564-55-7542, NIBB, Myodaiji G401) Assistant Professor Yoshiaki Kamada (yoshikam@nibb.ac.jp, Tel 0564-55-7536, NIBB, Myodaiji G604) Associate Professor Mariko Sasaki (m_sasaki@nig.ac.jp, Tel 055-981-6817, NIG A224)