

## View Syllabus Information

Course Information				
<b>Year</b>	2020	<b>School</b>	School of International Liberal Studies	
<b>Course Title</b>	Molecular Biology 51			
<b>Instructor</b>	ASAHI, Toru / SAWAMURA, Naoya			
<b>Term/Day/Period</b>	fall semester Thur.2			
<b>Category</b>	Intermediate Subjects	<b>Eligible Year</b>	2nd year and above	<b>Credits</b> 2
<b>Classroom</b>		<b>Campus</b>	waseda	
<b>Course Key</b>	210LE30200	<b>Course Class Code</b>	51	
<b>Main Language</b>	English			
<b>Course Code</b>	BIOX221L			
<b>First Academic disciplines</b>	Biology			
<b>Second Academic disciplines</b>	Biology			
<b>Third Academic disciplines</b>	Molecular biology			
<b>Level</b>	Intermediate, developmental and applicative	<b>Types of lesson</b>	Lecture	

Syllabus Information		Latest Update : 2020/10/14 17:54:31
<b>Course Outline</b>	<p>Biology remained a descriptive science that cataloged diverse biological phenomena without being able to explain the mechanics of how they occur until the biological revolution of the twentieth century. This revolution began in mid-century and was triggered by Watson and Crick's discovery of the DNA double helix. Molecular biology, developing out of this discovery, delivered solutions to the problem of how the genetic constitution of a cell and organism determine its appearance and function.</p> <p>Molecular biology is a rich, integrative science that brings together biochemistry, biophysics, genetics, physiology, anatomy, microscopy, computer science, and developmental biology, and it provides insights into the multifaceted story of the birth, life, and death. With this molecular foundation, biotechnology was developed, which enable us to change bio-organisms and to correct the mechanisms underlying many life-threatening conditions including cancer, diabetes and epidemic diseases. Biotechnology, however, is now beginning to alter the social fabric by affecting everyday life not only in the field of agriculture and medicine but also in the area such as criminology, insurance business, energy industry and ethics. The potential to manipulate various life processes by gene modification and animal cloning may pose a danger of unexpected alteration of human destiny. By learning molecular biology, we hope students develop the insights into the biological processes within one's body as well as the awareness of good and evil potentials harbored in biotechnology.</p>	
<b>Objectives</b>	<p>The objective of this course is to study the molecules and machinery involved in life process. During the last three decades, a remarkable progress has been made in identifying mechanisms underlying cancer leading to the understanding of molecules involved in cell proliferation, cell maintenance and cell death. In this course, we will cover the major fundamental findings as well as disease related topics including cancer, inherited diseases and acquired diseases.</p>	
<b>Course Schedule</b>	<p>[Class 1] Introduction (Toru Asahi) - 10/1</p> <p>Molecular Biology 51 is given to you online, and the first lecture is on Zoom.            The URL is <a href="https://zoom.us/j/96536134261?pwd=c2JMZzZhdWFhSkUvNkRuckJkdhNnNkQT09">https://zoom.us/j/96536134261?pwd=c2JMZzZhdWFhSkUvNkRuckJkdhNnNkQT09</a>            ID: 965 3613 4261            PW: 286135</p>	

[Class 2] The structure and function of cells and tissues (Naoya Sawamura) - 10/8  
 [Class 3] Life, from birth to death (Naoya Sawamura) - 10/15  
 [Class 4] Genes and Proteins (Naoya Sawamura) - 10/22  
 [Class 5] Molecular genetic techniques (Naoya Sawamura) - 10/29  
 [Class 6] Biological activity and energy metabolism (Naoya Sawamura) - 11/5  
 [Class 7] Advanced Molecular Biology 1: Aging and age-related diseases (Naoya Sawamura) - 11/12  
 [Class 8] Midterm examination (Naoya Sawamura) - 11/19  
 [Class 9] Development of multicellular organisms (Naoya Sawamura) - 11/26  
 [Class10] Advanced Molecular Biology 2: Cancer (Naoya Sawamura) - 12/3  
 [Class11] Advanced Molecular Biology 3: Topics in our research project (Naoya Sawamura) - 12/10  
 [Class12] Biotechnology and health care (Naoya Sawamura) - 12/17  
 [Class13] Medical science and health care (Naoya Sawamura) - 1/7  
 [Class14] Molecular genetic techniques in our life (Naoya Sawamura) - 1/14  
 [Class15] Final examination (Naoya Sawamura) - 1/21

**Reference**

Molecular Biology of the Cell 5ed by Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter  
 Garland Science; 5th Revised (2008/1/2) ISBN-10: 0815341067 ISBN-13: 978-0815341062

**Evaluation**

Rate	Evaluation Criteria
Exam: 50%	Examination
Class Participation: 50%	Class attendance and participation

**Note / URL**