Course number	U-LAS14 10013 LE68		
Course title (and course title in English)	Basic Biology and Metabolism-E2 Basic Biology and Metabolism-E2	**Instructor's name, job title, and department of affiliation**	Graduate School of Pharmaceutical Sciences Senior Lecturer,MACPHERSON TOM
Group	Natural Sciences	**Field(Classification)**	Biology(Introduction)
Language of instruction	English	**Old group**	Group B
Number of credits	2		
Number of weekly time blocks	1	**Class style**	Lecture (Face-to-face course)
Year/semesters	2026 • Second semester		
Days and periods	Tue.4	**Target year**	All students
Eligible students	For all majors		

[Overview and purpose of the course]

How do living organisms grow, generate energy, sustain life, and reproduce?

These are the core questions we will explore in this introductory biology course, which focusses on the cellular, chemical, and genetic processes that support life.
Designed to provide a clear and accessible introduction to fundamental biological concepts and how we study them, this course requires no prior knowledge of biology, ensuring students at all levels can comfortably engage with the material.
Students will have the opportunity to explore topics of their own interests through class presentation assignments, such as news or journal articles related to cell biology.

Students are encouraged to continue on to "Introduction to Molecular Cell Biology-E2 (1st semester)" as a follow-up to this course.

[Course objectives]

Students will gain a foundational understanding of cell structure and function.
Students will acquire an understanding of how basic biological processes influence both simple and complex living organisms.
Students will develop the ability to understand and discuss various aspects of Biology in English.

[Course schedule and contents)]

1. Introduction to Biology
2. Cells & How We Study Them
3. Energy & Metabolism I
4. Energy & Metabolism II
5. Protein Structure and Function
6. Cell Signaling
7. Mid-term exam + Feedback,
   Explanation of Class Presentations
8. DNA and Chromosomes
9. Gene Transcription & Translation
10. Reproduction & Cell Cycle
11. Class Presentations
12. Genetic Sequencing & Engineering

Continue to Basic Biology and Metabolism-E2(2)↓↓↓

Basic Biology and Metabolism-E2(2)

13. Gene Mutation & Variation
14. Cancer
≪Final exam≫
15. Feedback

[Course requirements]

This is an introductory course and prior knowledge of the topic is not necessary. All essential knowledge for the class and exams will be provided in class. Students need only to have a curiosity to learn about the biological processes of life.

[Evaluation methods and policy]

Attendance & Participation 25%.
Midterm Exam (Multiple Choice) 25%.
Class Presentation (Short Oral Talk) 25%.
Final Exam (Multiple Choice) 25%.

[Textbooks]

Alberts, Hopkin, Johnson, Morgan, Raff, Roberts, Walter 『Essential Cell Biology 6th Edition』 （W.W. Norton and Company, 2023） ISBN:978-1-324-03339-4
We will occasionally also the following free textbook.
OpenStax Biology 2e freely available to download at the URL below.

（Related URL）

https://openstax.org/details/books/biology-2e

[Study outside of class (preparation and review)]

Review from the textbook, previous lecture content, and preparation for assignments to be presented in class.

[Other information (office hours, etc.)]

The contents of the syllabus are a guide to the content of the course, the exact content may change. Input and suggests from students are very welcome and I am happy to discuss the course material with students via email or in-person meeting.

[Essential courses]

Faculty of Pharmaceutical Sciences,Pharmaceutical Sciences, Faculty of Pharmaceutical Sciences,Pharmacy