科目ナンバリング	U-LAS14 20035 LE68						
授業科目名 <英訳>	Basic Biology-E2 Basic Biology-E2			担当者所属 職名・氏名	生命科学研究科 准教授 Adam Tsuda GUY		
群	自然科学科目群		分野(分類)	生物学(各論)		使用言語	英語
旧群	B群	単位数	2単位	週コマ数	1コマ	授業形態	講義（対面授業科目）
開講年度・開講期	2026・前期	曜時限	月3	配当学年	主として1・2回生	対象学生	理系向

[授業の概要・目的]

This class will provide a basic introduction to molecular and cell biology, in English. The class is open to 1st and 2nd year students, and will assume some prior familiarity with elementary chemistry and biology, although students from other majors are welcome to attend. The objective for the class is to introduce students to core concepts in biology, the scientific study of life. We will pay attention to some of the similarities in different organisms as well as some of the obvious differences, not only between organisms but between cell types, and at the molecular level of protein functions.

[到達目標]

Students will gain familiarity with the fundamentals of biology, starting with the most basic concepts, considering the chemistry of carbon and water, and then the macromolecules that define life and how cells utilise different forms of energy to maintain organised complexity. Next, students will learn about the structure of the cell, and how cellular function depends on complex interactions between proteins, nucleic acids, lipids, and carbohydrates, acting alone, in complexes, or in larger structures such as organelles. This will be followed by two classes on the Central Dogma of Molecular Biology, followed by a class devoted to the application of our basic knowledge of genes: DNA technology. The remaining classes will show students how life is classified scientifically, and introduce some of the theory and fundamental processes of evolutionary biology.

[授業計画と内容]

1. Introductory Lecture
2. The Role of Chemistry in Biology
3. Biological Macromolecules I
4. Biological Macromolecules II
5. Energy and Life
6. Cell Structure and Function
7. Lipids and Membranes
8. Cell Respiration
9. Cell Division
10. Central Dogma I
11. Central Dogma II
12. DNA Technology
13. Diversity & Classification of Life
14. Introduction to Evolutionary Biology

≪Final Exam≫

15. Feedback Class

Basic Biology-E2(2)へ続く↓↓↓

Basic Biology-E2(2)

[履修要件]

This class is open to all 1st and 2nd year science students, but it requires some basic (high school-level) knowledge of chemistry and biology.

[成績評価の方法・観点]

Lectures will encourage student participation. There will be in-class quizzes and then a final exam to assess comprehension of the concepts of basic biology taught in this course. Evaluation: attendance and student participation: 20%; quizzes: 30%; final exam: 50%.

[教科書]

使用しない
Lecture handouts will be provided for each class.

[参考書等]

（参考書）
Wasserman, Minorsky, Cain, Urry, Waterman, Stanley & Reece 『Campbell Biology』（Pearson）ISBN: 9780134082318（Most of the content of this course is covered in this textbook）

[授業外学修（予習・復習）等]

Students may need 2-3 hours per week to review the lecture material and look up any background information as necessary. Some students may know the subject already, but need to learn the English vocabulary; others may need to learn both Biology and English.

[その他（オフィスアワー等）]

In principle, anytime. Please contact the instructor by e-mail if you have any questions. For consultations about course-related matters outside class hours, please make an appointment directly or by e-mail.

[主要授業科目（学部・学科名）]

理学部