科目ナンバリング	U-LAS14 20037 LE68				
授業科目名<英訳>	Introduction to Biochemistry-E2 Introduction to Biochemistry-E2			担当者所属職名・氏名	医学研究科　講師　Marco,Marques Candeias
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	2024・後期	曜時限	火2/火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 introductory course focuses on the basic concepts of biochemistry. It begins from the molecular design of life and considers its major players; DNA as the genetic material, and then RNA, proteins, carbohydrates and lipids. Based on these preliminary concepts, the course then continues to consider the basic processes involved in metabolism and energy generation in living organisms.

[到達目標]

The course provides an understanding of the underlying concepts and principles of the biochemical and molecular processes that control all life. Such understanding will enable students not only to better appreciate the complexities of diverse biological and physiological systems but to use these basic concepts in their everyday lives and as a foundation for many other fields of study.

[授業計画と内容]

Main Topics:

1. Introduction to biochemistry, an evolving science
2. Genomes, DNA and DNA replication
3. Genes and gene expression
4. RNA: Life's Indispensable Molecule
5. Protein composition and structure
6. Exploring DNA and RNA
7. Exploring proteins
8. Introduction to enzymes
9. Carbohydrates
10. Lipids and cell membranes
11. Introduction to metabolism
12. Glycolysis
13. Citric acid cycle
14. Oxidative phosphorylation
15. Final examination
16. Feedback discussions

(the above subjects will be taught in 14 classes + examination + feedback)

[履修要件]

特になし

Introduction to Biochemistry-E2(2)へ続く↓↓↓

Introduction to Biochemistry-E2(2)

[成績評価の方法・観点]

Evaluation will be based on active participation (~25 %), mid-course tests (~30 %), assignments (~5%) and a final examination (~40 %)

[教科書]

Alberts; Walter; etc 『Molecular Biology of the Cell』（Garland Science）ISBN:978-0815344537
Denise R. Ferrier 『Biochemistry (Lippincott's Illustrated Reviews Series)』（Lippincott Williams & Wilkins）ISBN:978-1496344496

[参考書等]

（参考書）
授業中に紹介する

[授業外学修（予習・復習）等]

*Full lecture slides and additional video clips will be provided. It is expected that students will have read and watched through the slides and clips at least once before class to familiarize themselves with the contents. During the lecture, active discussion and participation (e.g. by a series of Q&A) will ensure a greater understanding of the basic concepts. Finally, a private review of the slides immediately after the lecture will ensure a full and solid understanding of the lecture concepts.
*The course is associated with a series of small-group, weekly seminars that will help students obtain a deeper understanding of the basic concepts

[その他（オフィスアワー等）]

*The course is presented as a series of engaging and active lectures with presentations (by the teacher), videos and discussion.
*We run an open door policy; questions and discussions will be happily addressed anytime, even outside the official office hour.