

11210LSMC642100 Advanced Molecular Biology

Instructors:

Pin-Chao Liao (廖品超), I-Ju Lee (李以如), Wei-Ching Chen (陳韋靜)

Time: F2F3F4 (Fri 9:00-12:00)

Room: LSII R217

一、課程說明 (Course Description)

The goal of this course is to develop a thorough understanding of the basic fundamentals of advanced molecular biology both from the perspective of known molecular mechanisms for regulating fundamental processes in a cell, and also from a theoretical applied perspective for using molecular biology as a laboratory tool. Molecular biology deals with nucleic acids and proteins and how these molecules interact within the cell to promote proper growth, division, and development. It is a large and ever-changing discipline. This course will emphasize the molecular mechanisms of DNA replication, repair, transcription, protein synthesis, and gene regulation in different organisms. In addition, we will take an in-depth look at some rapidly evolving fields, including chromatin structure and function, RNA polymerase dynamics, and regulation of gene expression by different types of RNAs.

二、指定用書 (Textbook)

Lewin's GENES XII. ISBN-13: 978-1-284-10449-3

Author(s): Jocelyn E. Krebs, PhD, Professor, University of Alaska, Anchorage;
Elliott S. Goldstein, PhD, Associate Professor, Arizona State University;
Stephen T. Kilpatrick, PhD, Associate Professor, University of Pittsburgh
at Johnstown

三、參考書籍 (References)

Other materials will be uploaded to eeclass.

四、教學方式 (Teaching method)

Lectures and 3 exams

五、教學進度(Syllabus)

Week	Date	Chapter	Instructor
1	9/15	Ch 9, 10	I-Ju Lee
2	9/22	Ch 11, 12	I-Ju Lee
3	9/29	No class	I-Ju Lee

4	10/6	Ch 13, 14	I-Ju Lee
5	10/13	Ch 15, 16	I-Ju Lee
6	10/20	First exam	I-Ju Lee
7	10/27	Ch 7, 8	Pin-Chao Liao
8	11/3	Ch 17, 18	Pin-Chao Liao
9	11/10	Ch 24, 26	Pin-Chao Liao
10	11/17	Ch 27, 28	Pin-Chao Liao
11	11/24	Second exam	Pin-Chao Liao
12	12/1	Ch 19, 20	Wei-Ching Chen
13	12/8	Ch 21, 22	Wei-Ching Chen
14	12/15	Ch 23, 25	Wei-Ching Chen
15	12/22	Ch 29, 30	Wei-Ching Chen
16	12/29	Final exam	Wei-Ching Chen

四、計分方式 (Evaluation)

33% for each section

This course does not involve the use of Artificial Intelligence (AI)