

114-1 Advanced Cell Biology-2

Class Time: 3:10 ~ 6:00 PM, Tuesdays**Language:** English**Credits:** 3 hours**Student number:** ≥ 3 **Classroom:** Rm 208 at NCKU Medical College**Coordinator:** Prof Li-Wha Wu (Ext. 3618)

Goals: Familiarize students with cell biology fundamentals and the application of this knowledge in addressing both basic and clinical research questions. To this end, students would know the basics of fundamental cell biology and how to apply what they learn in addressing cell biology-related questions arising from their research interests, including cancer biology, immunology, neurobiology, microbial pathology, and developmental biology.

Format: Divided into 2 parts: 1st on the fundamentals of cell biology and contemporary cell biology technology, and 2nd on the applied knowledge in cell differentiation, organogenesis, embryonic development, immunity, pathogen-host interaction, neurosciences, and cancer. Each lecture will be delivered by the instructors with their expertise in the field. Problem-based assignments may be given before or after the lecture via Moodle.

Materials: Molecular Biology of the Cell by Alberts B et al (recent editions) and the relevant published materials given by each lecture

Attention: No leaves should be requested during the mid-term and final exams.

Grading criteria:

Evaluation criteria	Percentage (%)	Good reading comprehension of scientific materials and excellent capabilities in applying professional knowledge	Abilities of updating and organizing innovative knowledge and demonstrating good communicational skills	Problem-solving skills
Punctuality and Attendance (Q/A included)	20	V	V	V
Problem-based assignments and panel discussion	20	V	V	V
Mid-term	30	V	V	V
PBL-based final exam	30	V	V	V

Course Progress Outline

Date	Week	Progress Description	Lecturer
9/9	1	Course overview	Wu, Li-Wha/吳梨華
9/16	2	Cell biology and its essential tools	Wu, Li-Wha/吳梨華
9/24	3	Plasma membrane	Chiang, Chi-Wu/蔣輯武
9/30	4	Cytoskeleton and cell movement	Jang, Chuen-Chuen /張純純
10/7	5	Endomembrane systems and organelles	Sun, Hung-Yu/孫宏羽
10/14	6	Cell cycle and its control system	Chen, Yun-Wen/陳韻雯
10/21	7	Cell death	Wan, Shu-Wen /萬書炆
10/28	8	Cell adhesion and extracellular matrix	Wang, Chu-An/王竹安
11/4	9	Mid-term	Wu, Li-Wha / 吳梨華
11/11	10	Cell-cell communication	Chen, Po-Han / 陳伯翰
11/18	11	Development and organogenesis	Huang, Hsiang-Ch/黃湘琦
11/25	12	Stem cell self-renewal and pluripotency	Wang, Yang-Kao/王仰高
12/2	13	Immunity	Wang, Shainn-Wei/王憲威
12/9	14	Nerve system	Chu, Chun-Hsien/朱俊憲
12/16	15	Pathogen and host interaction	Teng, Ching-Hao/鄧景浩
12/23	16	Cancer	Wu, Li-Wha/ 吳梨華
12/29	17	Panel discussion/lecture review (make-up day for 11/11)	Wu, Li-Wha/吳梨華
2026/1/6	18	Final exam	Wu, Li-Wha/ 吳梨華