

## 114-1 Advanced Cell Biology-1 高等細胞生物學

Class Time: 1:10 ~ 4:00 PM, Wednesdays

Language: Mandarin

Classroom: Rm 602 at NCKU Medical College

Coordinator: 吳梨華老師 (Ext. 3618)

**Goals:** Familiarize students with the fundamentals of cell biology 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 in the research field of their interest, including cancer biology, immunology, neurobiology, microbial pathology, and developmental biology.



**Format:** Divided into two 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 lecturer

**Attention:** The students should NOT ask for leave during the mid-term and final exams.

**Grading Criteria:**

| 方法                                  | 百分比(%) | 閱讀、理解與運用專業知識 | 彙整新知與良好的溝通能力 | 解決研究問題的能力 |
|-------------------------------------|--------|--------------|--------------|-----------|
| 準時出席與參與課程 Q/A 討論                    | 20     | V            | V            | V         |
| PBL assignment and panel discussion | 20     | V            | V            | V         |
| 期中考 Midterm Exam                    | 30     | V            | V            | V         |
| 期末考 Term exam                       | 30     | V            | V            | V         |

### 課程進度 Course Progress Outline

| 日期       | 週次 Week | 進度說明 Progress Description              | Lecturer              |
|----------|---------|--|-----------------------|
| 9/10     | 1       | Course overview                        | 吳梨華/Wu, Li-Wha        |
| 9/17     | 2       | Cell biology and its essential tools   | 吳梨華/Wu, Li-Wha        |
| 9/24     | 3       | Plasma membrane                        | 蔣輯武/Chiang, Chi-Wu    |
| 10/1     | 4       | Cytoskeleton and cell movement         | 蔣輯武/Chiang, Chi-Wu    |
| 10/8     | 5       | Endomembrane systems and organelles    | 蔣輯武/Chiang, Chi-Wu    |
| 10/15    | 6       | Cell cycle and its control system      | 陳韻雯/Chen, Yun-Wen     |
| 10/22    | 7       | Cell death                             | 吳梨華/Wu, Li-Wha        |
| 10/29    | 8       | Cell adhesion and extracellular matrix | 黃湘琦/Huang, Hsiang-Chi |
| 11/5     | 9       | Mid-term exam                          | 吳梨華/Wu, Li-Wha        |
| 11/12    | 10      | Cell-cell communication                | 陳威宇/Chen, Wei-Yu      |
| 11/19    | 11      | Germ cells and fertilization           | 王竹安/Wang, Chu-An      |
| 11/26    | 12      | Development and organogenesis          | 黃湘琦/Huang, Hsiang-Chi |
| 12/3     | 13      | Immunity                               | 王憲威/Wang, Shainn-Wei  |
| 12/10    | 14      | Nervous system                         | 朱俊憲/Chu, Chun-Hsien   |
| 12/17    | 15      | Pathogen and host interaction          | 鄧景浩/Teng, Ching-Hao   |
| 12/24    | 16      | Cancer                                 | 吳梨華/Wu, Li-Wha        |
| 12/31    | 17      | Panel discussion                       | 吳梨華/Wu, Li-Wha        |
| 2026/1/7 | 18      | Final exam                             | 吳梨華/Wu, Li-Wha        |