Cellular Network of Biological Molecules
生体分子の細胞ネットワーク
（国立台湾大学）

Course	Cellular Network of Biological Molecules
Course No.	01ER438
Credits	2 credits
Grade	1st year
Timetable	Spring AB
Instructor	Tang-Long Shen, Chia-Ying Chu, Chun-Che Chang, Shyh-Jye Lee, Feng-Ting Huang
Course Overview	In this course, students will study the molecules in cells, their working mechanisms, molecular processes as well as their participation in the cellular functions and bio-reaction. These molecular signals have both common and unique aspects in the variety of organisms. Therefore, we will introduce the important processes in not only animal tissues but also the processes in plants and microorganisms. With the connection using TV meeting system to Kyoto university, we will facilitate the international discussion. The course will be held in English only.
Remarks	Conducted in English at National Taiwan University.
Course Type	Lecture
Link between Course Objectives and Activities	Through the learning of cellular network of biological molecules, students will be able to understand the health issues at molecular and cellular levels.
Academic Goal	1. To be able understand the function of bio-molecules at cellular level 2. To be familiar to the international discussion in English about cellular network of biological molecules
Course Schedule	1-2. Introduction in NTU 3-4. Microscopy and Central dogma/Protein conformation, dynamics and enzymology 5-6. Transcription 7-8. Cellular responses and adaptation to environmental factors (I) --- Development 9-10. Regulation of gene expression --- Small RNA mediated gene silencing in animals 11-12. Signaling transduction 13-14. The future of model organisms in human disease research and introduction to human genetics 15-16. Cellular responses and adaptation to environmental factors (II) --- Cell migration 17-18. Cellular responses and adaptation to environmental factors (III) --- Cell death 19-20. Regulation of gene expression (I) --- Transcriptional controls
Course Prerequisites and Advisories	Students having interest on cells, and willing to understand signal transduction and molecular reaction.
Grading Philosophy (Percentage/ Criteria/ Methodology)	Students will be graded by class participation and presentation. Participation in the class (50%) and paper presentation (50%). Grading Criteria is A+, A, A-, B+, B, B-, and C+/C/C- (Failure). Students need to attend at least 80% of classes for getting grade C.
Self-Directed Learning Other Than Coursework	Read materials introduced in class
Textbooks, References and Supplementary Materials	Molecular Cell Biology by Lodish et al (4th edition) (Freeman)
Office Hours	Name: Tang-Long Shen E-mail: shentl@ntu.edu.tw
Other (i.e. Expectations on Classroom, Conduct and Decorum etc.)	

Related Courses	Cancer Biology (UT)
Keywords	Signal Transduction, Cells, Organs, Animals, Plants, Microorganisms