

Microbial Diversity and Ecology 微生物生態與多樣性	
Course Code	DIC 8047
Credits	Three (lectures: 3 hr per week)
Lecturers	Yin-Ru Chiang , Sen-Lin Tang , Daryi Wang , Isheng Jason Tsai , Chih-Horng Kuo
Time	Tuesday 09:10-12:10
Place	B204, BRC, AS
Description	It is hard to understand an ecosystem without understanding the metabolism of microorganisms living there. The main aim of this course to lead students to know the background knowledge of microbial diversity and the relevant research fields, including the phylogenetic and functional diversity of eukaryotic and prokaryotic microorganisms, metagenomics, microbial physiology and metabolism, biogeochemistry, and oceanography. The techniques and approaches related to microbial ecology have been significantly advanced in the past decade; thus, the relevant tools will be introduced in the course. Moreover, the oral presentation and discussion of students will be the important parts in this course that will facilitate students to have more understanding of microbial diversity.
Purpose	1. Learn about the background of microbial ecology, including microbial diversity, evolution, physiology and metabolism, biogeochemistry and oceanography. 2. Study classical and emerging techniques related to microbial ecology.
Evaluation	25 % Class participation; 25 % Attendance; 25% Oral presentation; 25 % Documents report
Textbooks and References	1. Processes in microbial ecology (ed. D. L. Kirchman), 2012, Oxford University Press, UK. 2. Brock biology of microorganisms (M. T. Madigan et al., 15th Edition, Pearson Education)

Short Schedule

Weeks taken	Content	Lecturer
Week 1 2/19	Algal diversity	Yin-Ru Chiang
Week 2 2/26	bacterial diversity	Sen-Lin Tang
Week 3 3/5	Archeal diversity	Daryi Wang
Week 4 3/12	Fungal diversity	Isheng Jason Tsai
Week 5 3/19	Microbe-host interactions	Daryi Wang
Week 6 3/26	Metagenomics	Sen-Lin Tang
Week 7 4/2	No Class: NTNU Intercollegiate Activity(4/2-4/3)	
Week 8 4/9	Biogeochemistry and biodegradation	Yin-Ru Chiang
Week 9 4/16	Genomics of prokaryotes	Chih-Horng Kuo
Week 10 4/23	Genomics of eukaryotic microorganisms	Isheng Jason Tsai

Week 11 4/30	Oral presentation and discussion of students	Chih-Horng Kuo
Week 12~	Oral presentation and discussion of students	Yin-Ru Chiang