

Ecological and Evolutionary Genomics	
Course Code	DIC 8010
Credits	Two (lectures and reading: 2 hr per week)
Organizers	Chung-Ping Lin, Pei-Chun Liao and Wen-Hsiung Li
Lecturers	Wen-Hsiung Li, Ming-Che Shih, Sen-Lin Tang, Arthur Shih, Ryuji Machida, John Wang, Trees Chuang, Mei-Yeh Lu, and Daryi Wang
Time	Tuesday, 15:10-17:00
Place	B208, Interdisciplinary Science & Technology Building
Prerequisites	Basic bioinformatics, genetics and molecular biology
Description	A topical course focusing on basic principles and skills of genomics, how to design experiments and obtain data, and how to analyze data. Also on how genomics is applied to solve ecological and evolutionary problems.
Objectives	To provide basic background in genomics and most updated knowledge, skills and applications of genomics to ecological or evolutionary problems.
	Assignment 40%; Discussion 30%; Report 30%

Week	Date	Topic	Lecturer
1	2/18	Introduction to genomics	M-C Shih
2	2/25	Modern sequencing technology & data preprocessing	Mei-Yeh Lu
3	3/4	Genome sequencing: planning and assembly	Lu & Li
4	3/11	Genome assembly	Arthur Shih
5	3/18	Comparative genomics	Trees Chuang
6	3/25	Reading reports and discussion	Trees Chuang
7	4/1	Transcriptome assembly: reference guided	Arthur Shih
8	4/8	Transcriptome assembly: de novo	Arthur Shih
9	4/15	Transcriptome (gene expression) analysis	Wen-Hsiung Li
10	4/22	Evolution of gene expression	Wen-Hsiung Li
11	4/29	Reading reports and discussion	Wen-Hsiung Li
12	5/6	Introduction to microbial ecology and metagenomics	Sen-Lin Tang
13	5/13	Methods for metagenomics	Daryi Wang
14	5/20	Introduction to marine metazoan ecology and genomics	Ryuji Machida
15	5/27	Reading reports and discussion	Tang/Wang
16	6/3	Genomic approaches to mutation identification of mutant traits	Wen-Hsiung Li
17	6/10	Ecological and behavioral genomics	John Wang
18	6/17	Reading reports and discussion	John Wang