

Molecular phylogeny		
Course Code:	For NTNU students: DID0005	For THU students: 5494
Credits	Three (lectures: 3 hr per week)	
Organizers	Prof. Chiao-Hao Chang	
Lecturers	Prof. Chiao-Hao Chang	
Time	Monday 14:20-17:20	
Place	B208, Biodiversity Research Center, BRCAS	
Prerequisites	BIOLOGY, GENETICS, EVOLUTION	
Description	Phylogenetics has been widely used in broad fields of biological research. This course will equip students with the principal concepts of Phylogenetics and skills of molecular phylogeny reconstructions. The lectures will address the development history, foundational concepts, and current applications of Phylogenetics. Moreover, several practices will be applied to train students the skills of reconstructing phylogenies with given real molecular data, interpreting phylogenetic trees, and resolving evolutionary questions independently.	
Purpose	Understanding and application of molecular phylogenetics	
Grade	Attendance 10%; homework: 50%; Presentations 40%	

Week	Date	Topic
Week 1	9/14	Introduction
Week 2	9/21	Trees
Week 3	9/28	Genes: Organization, Function and Evolution
Week 4	10/5	Molecular evolution and population genetics
Week 5	10/12	Measuring genetic change
Week 6	10/19	Information resources for genes and proteins
Week 7	10/26	Models of Molecular Evolution
Week 8	11/2	Sequence Alignment
Week 9	11/9	Inferring molecular evolution
Week 10	11/16	Applications of molecular evolution
Week 11	11/23	Midterm Exam
Week 12	11/30	Plant phylogenomics

Week 13	12/7	Recent important studies
Week 14	12/14	Students' project practice I
Week 15	12/21	Students' project practice II
Week 16	12/28	Students' project presentation
Week 17	1/4	Students' project presentation
Week 18	1/11	Final Exam