

SEMESTER I
LSM4254 PRINCIPLES OF TAXONOMY AND SYSTEMATICS

Prerequisite: LSM1103

Workload: 26 lecture hours + 20 practicals hours + 4 tutorials hours: 4 hrs/week

This module introduces students to taxonomy and systematics; i.e., the science of grouping biodiversity into species, describing the species, and classifying this diversity into higher-level taxa that reflect evolutionary history. The module has two main goals: (1) It introduces the main concepts and goals of taxonomy and systematics. (2) It teaches the qualitative and quantitative techniques that are today used to describe/identify species and higher-level taxa based on the analysis of morphological and DNA sequence evidence. The aim is to equip environmental as well as other biologists with a thorough understanding of taxonomic/systematic units and the tools needed for evaluating and quantifying diversity in samples of plant and animal specimens. Most examples are based on Singapore's biodiversity which remains largely unknown.

S/N	Topics	Lecture hours
1	Species Concepts in Theory of Practice	6
2	Species Identification (Morphology, DNA sequences)	4
3	Species Richness Estimation	2
4	Nomenclature: accurate information storage through names	2
5	Tree-of-Life: Phylogenetic Techniques for Tree Reconstruction	10
6	Classification and Ranking	2
Total lectures :		26 h
Tutorials (presentation):		4 h
Practicals:		20 h
Total hours:		50h

TEXT BOOK (Reference books): assigned readings from journals

MODE OF ASSESSMENT:

Final Exam: 40%, Practical and IVLE Participation: 20%, Oral presentation: 15%, Species Webpage: 25%

MODULE CO-ORDINATOR: Prof. Rudolf Meier

LECTURER: Prof. Rudolf Meier