Module code	SB-4201		
Module Title	Population Genetics, Systematics and Evolution		
Degree/Diploma	Bachelor of Science (Biology)		
Type of Module	Major Core		
Modular Credits	4	**Total student Workload**	8 hours/week
		Contact hours	6 hours/week
Prerequisite	SB-2211 Genetics		
Anti-requisite	None		

Aims

This module will teach the foundations of population genetics and its importance for ecological and evolutionary studies. Students will be introduced into the concept of species and the challenges associated with their intra- and inter-specific classification. The history of life on Earth will be explored based on latest geological, fossil and phylogenetic analyses.

Learning Outcomes

On successful completion of this module, a student will be expected to be able to:

Lower order :	40%	- Describe the major principles of population genetics - Describe the major species concepts - Describe the major intra- and inter-specific classification methods - Describe how natural selection works and how it contributes to diversity - Describe the major episodes of life on Earth - Describe the major events in Southeast Asian biogeography
Middle order :	40%	- Explain the Hardy-Weinberg Law and its application - Explain the difficulties in circumscribing and classifying species - Explain how variation within species can lead to new species - Explain how geology and the environment have shaped life on Earth
Higher order:	20%	- Classify groups of specimens, both below and above species level - Predict what happens to population genetic structure under different selection pressures, population sizes and mutation rates.

Module Contents

- Molecular techniques for studying genetic variation within and between species
- The Hardy-Weinberg Law/Model, equilibrium and its assumptions
- Species concepts, taxonomy, evolution and natural selection
- The major models and methods behind intra- and inter-specific classifications
- An overview of the history of life on Earth, and the biogeography of Southeast Asia

Assessment	Formative assessment	Tutorial assignments and feedback
	Summative assessment	Examination: 60%
		Coursework: 40% - 4 practical reports (20%) - 2 class tests (20%)