Revised (20 Oct 2021)

OCES 3160 ECOLOGY

1. Course Description

Credit points: 3
Pre-requisite: Nil
Exclusion: Nil
Brief description:
This course is designed to equip students with a basic understanding of ecology, which includes organism-environment (biotic-abiotic) interactions, the characteristics of populations as a basic biological unit in an ecosystem, intra- and inter-specific interactions, as well as human impacts on biodiversity and ecosystems.

2. Intended Learning Outcomes

On successful completion of this course, students are expected to be able to:

1. Examine the different levels of organization in the biosphere (i.e. individual, population, community and ecosystem).
2. Assess the interactions between individuals of the same species, between different species of organisms, and between living things and the physical environment.
3. Identify major environmental problems and the scientific tools for evaluating and addressing the problems.
4. Critically evaluate scientific literature so as to (i) identify the objectives of the study, (ii) appreciate the importance of the scientific questions addressed, (iii) understand the principle, advantages and limitations of the experimental design and data analysis methods, (iv) evaluate the soundness of the conclusion drawn.

3. Assessment Scheme

Midterm exam:	50%
Final exam:	50%

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4. Student Learning Resources:

Lecture notes and supplementary reading materials will be made available on Canvas (canvas.ust.hk) prior to each lecture.

Reference textbook: Peter Stiling "*Ecology: Global Insights and Investigations"* 2nd edition (2015), McGraw-Hill Education

5. Learning Activities

Three hours of lectures per week

6. Course Schedule

Wk	Topic
1	Introduction – What is Ecology? Ecological methods
2	The Ecology of Hong Kong
	Genetics and evolutionary ecology
3	Natural selection, speciation
	Physiological ecology of plants
4	Physiological ecology of animals
	Behavioural ecology: foraging behaviors
5	Behavioural ecology: social behaviors, kin selection, euscociality
	Behavioural ecology: mating systems, sexual selection
6	Life history strategies
	Demographic techniques and population patterns
7	Population growth
	Public Holiday
8	**Mid-term Exam**
	No Class
9	Competition & Coexistence
10	Facilitation
11	Predation
12	Herbivory
13	Parasitism
14	Island Biogeography