

**SEMESTER I & II**  
**LSM2251 ECOLOGY AND ENVIRONMENT**

**Prerequisite:** GCE 'A' Level or H2 Biology or equivalent, or LSM1301 or LSM1301X

**Workload:** 26 lecture hours + 6 tutorial hours + 18 practical hours including one Saturday fieldtrip

**Course description:**

This module introduces students to the science of ecology and its role in understanding environmental processes. It covers both the major concepts and their real-world applications. Topics will include models in ecology, organisms in their environment, evolution and extinction, life history strategies, population biology, ecological interactions, community ecology, ecological energetics, nutrient cycling, landscape ecology.

S/N	Topics	Lecture hours (26 hours)
1.	Course overview. What is Ecology? Why is it relevant?	2
2.	The physical environment; aquatic vs terrestrial environments; physical variables; endotherms and ectotherms; water relations in plants and animals.	4
3.	Genetics and ecology; evolution and extinction.	2
4.	Population ecology; distributions and abundance; population dynamics; population growth – models and reality; life history strategies.	4
5.	Ecological interactions: intra- and inter-specific competition; niches; predation; herbivory; parasitism and disease; mutualisms.	4
6.	Community ecology; assemblages or superorganisms; types of communities; community structure; diversity and stability; succession.	4
7.	The ecosystem concept; ecological energetics; primary production; energy flow; trophic levels; energy and carbon; nutrient cycling.	2
8.	Landscape ecology; landscape structure and processes; landscape change; global ecology; the Gaia hypothesis; human impacts on global processes.	4
	Practicals/Tutorials:	6 x 4h= 24h
	<b>Total hours:</b>	50h

**TEXT BOOK:**

Molles, M. C., 2015. *Ecology: Concepts and Applications*. McGraw Hill, 7th Edition.

Smith, T. M. & R. L. Smith, 2015. *Elements of Ecology*. Pearson/Benjamin Cummings, 9th Edition.

**MODE OF ASSESSMENT:**

50% - Continual Assessments (Tests and reports)

50% - Final Exam (Closed Book; short answers and essays)

**LECTURERS/Module Coordinators:**

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