

SEMESTER II

LSM4261 MARINE BIOLOGY

Prerequisite: LSM3254

Workload: 40 lecture hours + 12 tutorial hours

Course description:

This module builds on the fundamental material covered in LSM3254 Ecology of Aquatic Environments. Primary literature and first-hand accounts will be used to explore selected topics, such as specific groups of organisms or particular environments, in more depth. Case studies based on recent papers will be used to elucidate contemporary theories. Students may also practice marine biological data-handling and analysis during in-class exercises. Guest speakers will be invited to present their current work and open discussion will be encouraged. The focus will be on tropical marine biology, using Singaporean examples wherever possible.

S/N	Topics	Lecture/ tutorial hours
1.	Introduction to marine biology An overview of the course structure and content. Recap of basic oceanography, marine ecology, key marine environments, resources from the sea, human impacts and marine environment management.	4
2.	Patterns, processes, ecosystems and organisms Estimating marine biodiversity; inferring marine biogeography and connectivity. Overview of oceanographic processes, productivity and drivers of fisheries. Selected ecosystems: deep sea, tropical coral reefs, seagrass meadows and mangrove forests. Focus on corals: intra- and interspecific variations and their drivers.	24
3.	Human-ocean interactions Living (renewable) and non-living (non-renewable) resources and their rates and patterns of exploitation will be examined. Impacts of human activities, both localized and global, assessed. The state of the marine environment, management of endangered species and critical habitats, management systems relevant to marine ecosystems including restoration techniques, will be critically discussed.	24
Total Lectures: 40h Tutorials: 12h		
Total hours:		52h

REFERENCE BOOKS:

- Castro, P. & Huber, M. *Marine Biology*. McGraw Hill.
- Sumich, J. *An Introduction to the Biology of Marine Life*. McGraw-Hill.
- Milne, D. *Marine Life and the Sea*. Wadsworth.
- Little, C. & Kitching, J.A. *The Biology of Rocky Shores*. Oxford University Press.
- Raffaelli, D. & Hawkins, S. *Intertidal Ecology*. Oxford: Chapman and Hall.

MODE OF ASSESSMENT: Continual assessment 60%; final open-book exam 40%.

MODULE CO-ORDINATOR AND LECTURER:

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