MANGALORE UNIVERSITY

Department of Biosciences

MSc Environmental Science

ESH501 ENVIRONMENTAL BIOLOGY 52 hrs.

Course Outcomes:

CO1 Gain the knowledge of ecosystems and population ecology.
CO2 Study various environmental factors in detail.
CO3 Understand various terminologies in ecology.
CO4 Learn atmospheric humidity in detail.

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UNIT I (13 hours)

Ecosystems: Structure, functions, biotic and abiotic components, food chain, types of food chain, food web, Diversity Stability rule, Homeostasis. Ecological niche, Spatial, Functional, Ecological Dominance. Energy flow in ecosystem, Lindeman model Ecotone & Edge effect, Ecological Pyramids.

UNIT II (13 hours)

Environmental factors: Limiting factors, Ecotone & Edge effect - climatic factors, influence of light on morphology and physiology of plants, characteristics of heliophytes and sciophytes, temperature – thermo periodicity, effect of low and high temperature on plants and animals.

UNIT III (13 hours)

Atmospheric humidity: Relative humidity in relation to metabolism of organism with suitable examples. Wind - mechanical effects of wind; lodging, breakage, deformation, anemophily and anemochory, physiological effects of wind. Edaphic factor - soil complex - soil erosion and soil conservation.

UNIT IV (13 hours)

Population ecology: Characteristics, population density, natality, mortality, age distribution, population growth, causes for population explosion, population control. Biological interactions- Interspecies and interspecies interactions, types of interspecific interaction - neutralism, positive interactions - negative interactions, both positive and negative interactions - Amensalism, mutualism, commensalism, parasitism and predation.

References:

1. Arora, M.P. Animal Behavior, Himalaya Publishing House.
2. Culvinvux, P. Ecology, John Wiley and Sons (1986)
3. Kormondy. Concepts of Ecology, Prentice Hall.
4. Krebs, J. Ecology, II Ed., Harper International.

5. Kumar *et al.* General Ecology, Vikas Publishing House Pvt. Ltd., New Delhi (1995)
6. Payne, A.I. The Ecology of Tropical lakes and Rivers, John Wiley (1986)
7. Sharma, P.D. Ecology and Environment, Rastogi Publications, Meerut, India.