



SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE (AUTONOMOUS)
(Accredited by NAAC)
(An ISO 9001:2015 Certified Institution)
SUNDARAKKOTTAI, MANNARGUDI – 614016.

PG AND RESEARCH DEPARTMENT OF BIOCHEMISTRY

Courses related to Cross Cutting Issues

Programme Name	Programme Code	Name of the Course	Course Code
M.Sc., Biochemistry	2PSBIC	EC V- Ecology and Environmental Sciences	P16BCE5

HEAD

PG and Research Department of Biochemistry
Sengamala Thayaar Educational Trust
Women's College (Autonomous)
Sundarakkottai, Mannargudi - 614 016

ELECTIVE COURSE V
ECOLOGY AND ENVIRONMENTAL SCIENCES

Objectives:

To study the physical and biological characters of the environment and the inter-relationship between biotic and abiotic components of nature as well as relationship among the individuals of the biotic components

Unit I

Environment – Physical environment: atmosphere (air), hydrosphere, lithosphere properties, interrelationship with living organisms. Abiotic and biotic environment and their interactions. Species interactions; types, interspecific competition, herbivory, carnivory, pollination, symbiosis. Population ecology – Population characteristics, population growth curve, population regulation, life history strategies (r and K selection); concept of meta population demes and dispersal, interdemec extinctions, age structured populations.

Unit II

Community ecology: Nature of communities, community structure and attributes, levels of species diversity and its measurement, edges and ecotones. Concept of habitat and niche, types of niche, niche width and overlap, fundamental and realized niche, resource partitioning, character displacement.

Unit III

Ecological succession and Ecosystem Ecology: Ecological succession types, mechanisms, changes involved in succession, concept of climax. Ecosystem structure, function, energy flow and mineral cycling (C, N, P, S), primary production and decomposition, structure and function of terrestrial (forest, grassland) and aquatic (fresh water, marine, estuarine) ecosystem.

Unit IV

Pollution: Environmental pollution, global environmental change, biodiversity; status, monitoring and documentation, major drivers of biodiversity change, biodiversity management approaches.

Unit V

Biogeography and Conservation Biology ; Major terrestrial biomes, theory of island biogeography, biogeographically zones of India. Principles of conservation, major approaches to management, Indian case studies on conservation/management strategy (Project Tiger, Biosphere reserves).

Reference books

1. Cell Biology, Genetics, Molecular Biology, Evolution And Ecology, P.S. Verma and V.K.Agarwal, S. Chand Company Ltd 2005.
2. Ecology and Environmental Biology, T.K.Saha, Books and Allied (P) Ltd, Kolkata 2011.
3. Modern concepts of Ecology, H.D.Kumar, 8th ed, Vikas Publishing House Pvt Ltd, 2008.
4. Fundamentals of Environment Biology, Dr. Biswarup Mukherjee, Silverline publications, 2008.
5. A Hand Book of Environmental Science, S S Negi, 2008.
6. A Text Book of Environmental Pollution, P.Panday, 2010.
7. A Text Book of Environmental Science, V. Thakur, 2012.
8. A Textbook of Environmental Science, Prabhat Patnaik, 2011.
9. A Textbook of Ecology, S.K. Dubey, 2012.
