

methods-chlorination, disinfection, ion exchangers, reverse osmosis and biological methods- Trickling filters, Activated Sludge Process, oxidation ponds, septic tanks and Imhoff tanks. Disposal of textile, radioactive, pharmaceutical, refinery, detergent and leather waste.

References:

1. Agrawal, K.C. 2001. Fundamentals of Environmental Biology, Nidhi Publishers, Bikaner, India.
2. Diwakar Rao, P.L. 1990. Pollution control Hand book, Utility Publications Ltd., Secunderabad. India.
3. Hosetti, B.B. and Arvind Kumar.1998. Environmental Impact Assessment and Management, Daya Publishing House, Delhi.
4. John Arundel, Sewage and Industrial Effluent Treatment, Blackwell Science Publishers.
5. Metcalf and Eddy, Waste Water Engineering, McGraw-Hill International.
6. Schmitz, R.J. 1996. Introduction to water pollution biology. Asian Books Pvt. Ltd., New Delhi.



HARD CORE COURSES

ESH558 CONSERVATION OF BIODIVERSITY

52 hrs.

Course Outcomes:

CO1 Explain the concept of biodiversity and its conservation.

CO2 Describe the legislations that have been developed to conserve biodiversity.

CO3 Get the knowledge of biodiversity and causes for biodiversity depletion.

CO4 Understand different biodiversity conservation methods which influence employment opportunities.

UNIT I (13 Hours)

Biodiversity – Definition, types - Genetic, Species, Ecosystem diversity; Alpha, Beta and Gamma diversity, values of Biodiversity – consumptive use value, optional values, productive use value, social value. Biowealth, endemism, significance of the endemism, hotspots of Biodiversity.

UNIT II (13 Hours)

Endangered flora and fauna of India. Red data book and IUCN categories. Endangered, Vulnerable and Rare species. Man - Wildlife conflicts. Ecological consequences of reduction in biodiversity. Biodiversity issues – Deforestation and its impact. Convention on Biological diversity (CBD), Man and Biosphere programme (MAB).

UNIT III (13 Hours)

Causes for depletion of biodiversity in India, Biodiversity in Karnataka. Conservation measures of biodiversity in Karnataka, Sacred grooves. Prospects and Perspectives of keystone species with special reference to Tiger.

UNIT IV (13 Hours)

Concept of conservation – objectives and management. Biosphere Reserves. Nilgiri Biosphere Reserve - Biosphere Reserves in India, *In situ* and *ex situ* conservation, Role of Zoos, National Parks and Sanctuaries in conservation, Biological Diversity Act of India.

References:

1. Agarwal, S.K. 2002. Biodiversity and Environment, APH Publishers, New Delhi.
2. Dadhich, L.K. and Sharma, A.P. 2002. Biodiversity – Strategies for Conservation, APH Publishing Corp., New Delhi.
3. Khan, T.I. and Dhari N. 1999. Global Biodiversity Conservation Measures, Pointer Publishers, Jaipur.
4. Krishnamurthy. K.V. 2003. An Advanced Text book on Biodiversity- Principles and Practice, Oxford and IBH publishing, New Delhi.
5. Nagore, A.P. 2000. Biological Diversity and International Environment Law.

SOFT CORE COURSES

ESS 559 ENERGY AND GREEN TECHNOLOGIES

39 hrs.

Course Outcomes:

CO1 Introduce various sources of energy.

CO2 Explain green technology as alternate sources of energy.

CO3 Learn energy resources and their management methods.

CO4 Understand the principles and advances of green technology.

UNIT I (13 Hours)

Introduction: Renewable energy sources, non-renewable energy sources, non-conventional and inexhaustible energy resources. Geothermal energy, wind driven power station, tidal power plants, glacier power plants, solar energy, nuclear energy, natural radioactivity, nuclear power plant, fast breeder reactors, nuclear fusion, gober gas plant.

UNIT II (13 Hours)