

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)

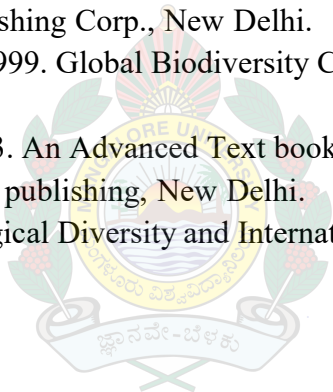
Causes for depletion of biodiversity in India, Biodiversity in Karnataka. Conservation measures of biodiversity in Karnataka, Sacred grooves. Prospects and Perspectives of keystone species with special reference to Tiger.

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)

Energy management – solar energy input conventional fuels – oil, coal, natural gas, uranium, risk of nuclear accidents, bio energy – biomass and biofuels, biogas- biogas technology, petroplants energy plantations and crops. Waste as renewable sources of energy- types of waste, classification based on chemical nature and physical state, composition of the waste, conversion of methane in to synthetic gas, factors effecting methane formation.

UNIT III (13 Hours)

Green Technology: Phytoremediation- Hyperaccumulators- biotic interactions, biofilm. Green chemistry– introduction- inception and evolution- importance of solvents- types of catalysts and their role- Biological alternatives- applications. Principles of green chemistry, advances in green chemistry.

References:

1. Agrawal, K.C.2001. Fundamentals of Environmental Biology, Nidhi Publishers, Bikaner, India.
2. Deka, M.M. 2002. Joint Forest Management of Water Projects.
3. Dubey, R.C. Text book of Biotechnology
4. Gangstad, E.O. 2002. Environment Managements of Water Projects.
5. Khenshoo, T.N. Environment Concerns and Strategies.
6. Maitra, M.K. 2002. Watershed Management; Project, Planning, Development and Implementation.
7. Rajendra Maneria, Environment Conservation and Planning.

