Lecture Plan for Introduction to Environmental Studies

(CHM 2041)

Unit No.	Unit name	Topics to be covered	Lect. No.
1	Multidisciplinary nature of environmental studies	Definition, scope and importance of Environmental Studies. Environment and its segments (atmosphere, lithosphere, hydrosphere and biosphere)	1
2	Ecosystem	Concept of an ecosystem, Structure of an ecosystem. Producers, consumers and decomposers	2
		Function of Ecosystem, Energy flow in the ecosystem, Food chains, food webs and ecological pyramids.	3-4
		Ecological succession: Introduction, types, characteristic features, **Structure and function of the following ecosystem (in brief):- 1. Forest ecosystem; 2. Grassland ecosystem*; 3. Desert ecosystem* 4. Aquatic ecosystems***	
3	Biodiversity and its Conservation	Definition, Types (genetic, species and ecosystem diversity). Classification and value of biodiversity	5
		Biodiversity at global, National and local levels. Biogeographical classification of India. Hot-spots of biodiversity.	6
		Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.	7
4	Environmental Pollution	Definition, cause, effects and control measures of 1. Water pollution	8
		2. Water pollution, **Soil pollution and Marine pollution*.**	9
		Definition, cause, effects and control measures of 3. Air pollution	10
		4.Acid rain, ozone layer depletion	11
		5.Climate change, global warming	12
		6. Noise pollution, **Thermal pollution and Nuclear hazards*.**	13
		7.Solid Waste Management: Causes, effects and control measures of urban and industrial wastes	14
5	Natural Resources	1. Renewable and non-renewable resources:	15

		Natural resources and associated problems. Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forest and tribal people	
		2. Water resources: Use and over-utilization of surface and ground water, Hydrological cycle, floods, drought, dams-benefits and problems	16
		3. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources. 4. **Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity*.**	17
		5. Energy resources: Growing energy needs, renewable and nonrenewable energy sources, use of alternate energy sources. 6. **Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification*.** **Role of an individual in conservation of natural resources*.**	18
6	Social Issues and the Environment	Sustainable development, • Urban problems related to energy • Water conservation, rain water harvesting, watershed management **• Resettlement and rehabilitation of people; its problems and concerns*.**	19
		Environment Protection Act, Air (Prevention and Control of Pollution) Act and Water (Prevention and control of Pollution) Act	20
		Wildlife Protection Act, Forest Conservation Act and Issues involved in enforcement of environmental legislation, Environmental Impact Assessment. Public awareness.	21
7	Human Population and the Environment	**Population growth, variation among nations*. Population Explosion – Family Welfare Programme***, Environment and Human Health*, **Human Rights**, Value Education, **HIV/AIDS*, Women and Child Welfare***	22

*** Topics for Assignments**

Text book: Text book of Environmental Studies for undergraduate courses by Bharucha, University press.