SYLLABUS

Unit 1 : Multidisciplinary nature of environmental studies

Definition, scope and importance

(2 lectures)

Need for public awareness.

III

Unit 2 : Natural Resources :

Renewable and non-renewable resources :

Natural resources and associated problems.

a) Forest resources : Use and over-exploitation, deforestation, case studies.

Timber extraction, mining, dams and their effects on forest and tribal people.

b) Water resources : Use and over-utilization of surface and ground water,

floods, drought, conflicts over water, dams-benefits and problems.

c) Mineral resources : Use and exploitation, environmental effects of extracting

and using mineral resources, case studies.

d) Food resources : World food problems, changes caused by agriculture and

overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water

logging, salinity, case studies.

e) Energy resources : Growing energy needs, renewable and non renewable

energy sources, use of alternate energy sources. Case studies.

f) Land resources : Land as a resource, land degradation, man induced

landslides, soil erosion and desertification.

• Role of an individual in conservation of natural resources.

• Equitable use of resoureces for sustainable lifestyles.

(8 lectures)

Unit 3 : Ecosystems

• Concept of an ecosystem.

IV

• Structure and function of an ecosystem.

• Producers, consumers and decomposers.

• Energy flow in the ecosystem.

• Ecological succession.

• Food chains, food webs and ecological pyramids.

• Introduction, types, characteristic features, structure and function of the following ecosystem :-

a. Forest ecosystem

b. Grassland ecosystem

c. Desert ecosystem

d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

Unit 4 : Biodiversity and its conservation

• Introduction – Definition : genetic, species and ecosystem diversity.

• Biogeographical classification of India

• Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values

• Biodiversity at global, National and local levels.

• Inida as a mega-diversity nation

V

• Hot-sports of biodiversity.

• 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.

(8 lectures)

Unit 5 : Environmental Pollution

Definition

• Cause, effects and control measures of :-

a. Air pollution

b. Water pollution

c. Soil pollution

d. Marine pollution

e. Noise pollution

f. Thermal pollution

g. Nuclear hazards

• Solid waste Management : Causes, effects and control measures of urban and industrial wastes.

• Role of an individual in prevention of pollution.

• Pollution case studies.

• Diaster management : floods, earthquake, cyclone and landslides.

(8 lectures)

VI

Unit 6 : Social Issues and the Environment

• From Unsustainable to Sustainable development

• Urban problems related to energy

• Water conservation, rain water harvesting, watershed management

• Resettlement and rahabilitation of people; its problems and concerns. Case Studies

• Environmental ethics : Issues and possible solutions.

• Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies.

• Wasteland reclamation.

• Consumerism and waste products.

• Environment Protection Act.

• Air (Prevention and Control of Pollution) Act.

• Water (Prevention and control of Pollution) Act

• Wildlife Protection Act

• Forest Conservation Act

• Issues involved in enforcement of environmental legislation.

• Public awareness.

(7 lectures)

Unit 7 : Human Population and the Environment

• Population growth, variation among nations.

• Population explosion – Family Welfare Programme.

VII

• Environment and human health.

• Human Rights.

• Value Education.

• HIV/AIDS.

• Women and Child Welfare.

• Role of Information Technology in Environment and human health.

• Case Studies.

(6 lectures)

Unit 8 : Field work

• Visit to a local area to document environmental assetsriver/forest/grassland/hill/mountain

• Visit to a local polluted site-Urban/Rural/Industrial/Agricultural

• Study of common plants, insects, birds.

• Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5

lecture hours)