

INDIRA GANDHI UNIVERSITY, MEERPUR, REWARI

CORE MODULE SYLLABUS FOR ENVIRONMENTAL STUDIES FOR UNDER GRADUATE COURSES OF ALL BRANCHES OF HIGHER EDUCATION

Maximum Marks : 100
External Marks: 80
Internal Marks: 20
Time : 3:00 hrs

Unit 1: The Multidisciplinary Nature of Environmental Studies

Definition, scope and importance
Need for public awareness.

(2
lectures)

Go To CHAPTER 1 – INTRODUCTION
APPENDIX 2 – GLOSSARY

Unit 2: Natural Resources

Renewable and Non-renewable Resources:

Σ Natural resources and associated problems.

- (a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests 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 resources for sustainable lifestyles. (8 lectures)

Unit 3: Ecosystems

- ∑ Concept of an ecosystem.
- ∑ 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, estauries) (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.
- ∑ India as a mega-diversity nation.
- ∑ Hot-spots 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)

Go To CHAPTER 5 – BIODIVERSITY
APPENDIX 2 – GLOSSARY
APPENDIX 1 – INTERNATIONAL CONVENTIONS AND PROTOCOLS
TO PROTECT THE ENVIRONMENT

Unit 5: Environmental Pollution

∑ Definition

∑ Causes, effects and control measures of

(a) Air pollution

(c) Soil pollution

(e) Noise pollution

(b) Water pollution

(d) Marine 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.

∑ Disaster management: Floods, earthquake, cyclone and landslides.

(8
lectures)

Go To CHAPTER 6 – ENVIRONMENTAL POLLUTION
CHAPTER 9 – SCIENCE OF ENVIRONMENT
APPENDIX 2 – GLOSSARY
APPENDIX 1 – INTERNATIONAL CONVENTIONS AND PROTOCOLS TO
PROTECT THE ENVIRONMENT

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 rehabilitation 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)

Go To

CHAPTER 7 – SOCIAL ISSUES AND THE ENVIRONMENT
 APPENDIX 1 – INTERNATIONAL CONVENTIONS AND PROTOCOLS TO
 PROTECT THE ENVIRONMENT
 APPENDIX 2 – GLOSSARY

Unit 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.
- ∑ Role of Information Technology in environment and human health.
- ∑ Case Studies. (6 lectures)

Go To

CHAPTER 8 – HUMAN POPULATION AND THE ENVIRONMENT
 APPENDIX 2 – GLOSSARY

Unit 8: Field Work

∑ Visit to a local area to document environmental assets—river/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)

Note:

There will be 09 questions in all. The question no. 01 is compulsory consisting of 08 short answer questions covering the whole syllabus. The remaining 08 questions will be from Unit 1 to Unit 7. The students are required to attempt any four questions out of these eight questions. All questions carry equal marks.