ENVIRONMENTAL STUDIES

Semester II	Internal Marks :25	External Marks: 75				
Course Code	Course Title	Category	L	T	P	Credits
21UGES	Environmental Studies	Part IV	30	2	-	2

PREAMBLE

To train the students to get awareness about total environment and its related problems and to make them to participate in the improvement and protection of the environment.

Course Outcome

CO Number	CO Statement	Knowledge Level
CO1	Outline the nature and scope of environmental studies	K2
CO2	Illustrate the various types of natural resources and its importance.	K2
CO3	Classification of various types of ecosystem with its structure and function.	K2
CO4	Develop an understanding of various types of pollution and biodiversity.	K3
CO5	List out the various types of social issues related with environment.	K4

ENVIRONMENTAL STUDIES

Unit: 1 Introduction to environmental studies, Definition, scope and importance. Need for public awareness

Unit: 2 Natural Resources: Renewable and non-renewable resources:

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, dam's benefits and problems.

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

d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.

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.

Unit: 3 Ecosystems

- Concept, Structure and function of an ecosystem.
- Producers, consumers and decomposers
- Energy flow in the ecosystem and 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)

Unit: 4 Biodiversity and Environmental Pollution

- Introduction, types and value of biodiversity
- 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.
- Definition, Causes, effects and control measures of :

  a. Air Pollution

  b. Water Pollution

c. Soil Pollution

d. Noise pollution

e. Nuclear hazards

- Solid, liquid Management: Causes, effects and control measures of industrial wastes.
- E-Waste Management: Sources and Types of E-waste. Effect of E-waste on environment and human body. Disposal of E-waste, Advantages of Recycling E-waste.
- Role of an individual in prevention of pollution
- Disaster management: floods, earthquake, cyclone and landslides.

Unit: 5 Social Issues and the Environment

- Water conservation, rain water harvesting, watershed management.
- Climate change, global warming, acid rain, ozone layer depletion,
- Wasteland reclamation.
- Environment Protection Act
- Wildlife Protection Act.
- Forest Conservation Act.
- Population explosion – Family Welfare Programmes
- Human Rights - Value Education
- HIV/ AIDS - Women and Child Welfare
- Role of Information Technology in Environment and human health

B. 19/7/2021

References:

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Public Ltd Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt ltd, Ahamedabad – 380013, India, E-mail: mapin@icenet.net(R)
3. Brunner R.C. 1989, Hazardous Waste Incineration, McGraw Hill Inc 480 p
4. Clark R.S. Marine Pollution, Clanderson Press Oxford (TB)
5. Cunningham, W.P.Cooper, T.H.Gorhani E & Hepworth, M.T. 2001.
6. De A.K. Environmental Chemistry, Wiley Eastern Ltd
7. Down to Earth, Centre for Science and Environment (R)
8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute Oxford University, Press 473p.
9. Hawkins, R.E. Encyclopedia of India Natural History, Bombay Natural History Society, Bombay (R)

19/7/2021

DEAN OF SCIENCE
CAUVERY COLLEGE FOR WOMEN
(AUTONOMOUS)
ANNAMALAI NAGAR
TIRUCHIRAPPALLI - 620 018
TAMILNADU

10. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press 1140 p.
11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws Himalaya Pub. House, Delhi 284 p.
12. Mckinney, M.L. & Schoch R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition 639 p.
13. Mhaskar A.K. Matter Hazardous, Techno-Science Publications (TB)
14. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
15. Odum, E.P. 1971 Fundamentals of Ecology. W.B. Saunders Co. USA. 574 p
16. Rao MN & Datta, A.K. 1987 Waste Water treatment, Oxford & IBH Publication Co. Pvt Ltd 345 p.
17. Sharma B.K. 2001 Environmental chemistry Goel Publ House, Meerut.
18. Survey of the Environment, The Hindu (M).
19. Townsend C. Harper, J and Michael Begon, Essentials of Ecology, Blackwell science (TB)
20. Trivedi R.K. Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol. I and II, Enviro Media (R).
21. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science Publications (TB).
22. Wagner K.D. 1998 Environmental Management. W.B. Saunders Co. Philadelphia USA 499 p.