

7.3.1 Portray the performance of the Institution in one area distinctive to its priority and thrust

15U2ARENV

**Syllabus for Environmental Studies
For
Under Graduate Courses of all Batches**

Course Code	15U2ARENV
Title of the Course	CORE MODULE SYLLABUS FOR ENVIRONMENTAL STUDIES FOR UNDER GRADUATE COURSES OF ALL BRANCHES OF HIGHER EDUCATION
Semester in which the course is to be taught	2
No. Of Credits	4
No. Of Contact Hours	72

Unit 1: The multidisciplinary nature of environmental studies

Definition, scope and importance

~~(2 lectures)~~

Need for public awareness

Unit 2: Natural resources:

Renewable and non-renewable resources:

- a. Forest resources: Use of over exploitation, deforestation, case studies. Timber, 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 of exploitation and environmental effects of extracting and using mineral resources, case studies.
 - d. Food resources: World food problems, changes caused by agriculture and overgrazing, effect of modern agricultural fertilizers- pesticides, 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 resources, 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 ecosystem (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

Unit 4: Biodiversity and its conservation

- Introduction- definition: genetic, species and ecosystem diversity
- Biographical classification of India
- Value of biodiversity: Consumptive use, productive use, social, ethical, aesthetic and option values
- Biodiversity at global, national and local level
- India as mega-diversity nation
- Hot-spots of biodiversity
- Threats of biodiversity: : habitat lose, 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

- Causes, effects and control measures of:
 - Air Pollution - Water pollution - Soil pollution - Marine pollution - Noise pollution - Thermal pollution - Nuclear pollution
- 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)

Unit 6: Social Issues and the Environment

- From unsustainable to sustainable development
 - Urban problem relate to energy
 - Water conservation, rain water harvesting, water shed management
 - Resettlement and rehabilitation of people, its problem 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 Pollution) Act
- Water (prevention and control of Pollution) Act
- Wildlife Protection Act
- Forest conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness

Unit 7: Human Population and the Environment

- Population growth, variation among nations
- Population exploitation- 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)

Unit 8: Field work

- Visit to a local area to document environmental assets- river/forest/grassland/hill/mountains.
- Visit to a local polluted site urban/rural/industrial/agricultural.
- Study of common plants, insects, birds.
- Study of simple ecosystem, pond, river, hill slopes etc.
- Each student has to submit a field report on any one of the above topics which forms the basis for evaluation of field work for 25 marks.

Reference

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21. Trivedi R.K and P.K Goel , Introduction to air pollution, Techno-Science Publication (TB)
22. Wagner K.D, 1998. Environmental Management. W.B Saunders Co. Phi;Adelphia, USA 499p

(M) Magazine
 (R) Reference
 (TB) Textbook

SIX MONTHY COMPULSORY CORE MODULE COURSE IN ENVIRONMENTAAL STUDIES: FOR UNDERGRADUATES

Teaching Methodologies

The Core Module syllabus for environmental Studies includes class room teaching and field work. The syllabus is divided into eight units covering 50 lectures. The first seven units will cover 45 lectures which are class room based on field activities which will be covered in five lecture hours and would provide students first-hand knowledge on various local environmental aspects. Field experience is one of the most effective learning mode of teaching into the realm of real learning in the field, where the teacher merely acts as a catalyst to interpret what the student observes or discovers in his/her own environment. Field studies areas essential as class work and form an irreplaceable synergistic tool in the entire learning process

Course material provided by UGC for class room teaching and filed activities be utilized.

The universities/colleges can also draw upon expertise of outside resource persons for teaching purposes

Environmental Core Module shall be integrated into the teaching programmes of all undergraduate courses.

Annual System: The duration of the course will be 50 lectures. The exam will be conducted along with the Annual Examination.

Semester System: The environment course of 50 lectures will be conducted in the Second semester and the examination shall be conducted at the end of the second semester.

Credit system: The core course will be awarded 4 credits

Exam Pattern: In case of awarding the marks, the question paper should carry ⁷⁵100 marks. The structure of the question paper being:

Part A, short answer pattern	25 marks
Part B, essay type with inbuilt choice	50 marks
Part C, Field Work <i>& Internal assessment</i>	25 marks



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