



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

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

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Preamble:

Earth being the only planet available for human society and since this planet has limited resources, human society has the primary obligation to avoid damage to Earth, revere Nature and conserve resources. The universal laws of Nature are supreme and society has had to pay heavily for transgressing these natural laws.

Over-consumption by fast-growing world population, unmindful toxic waste production, deforestation, desertification, droughts, unrelenting greenhouse gas emissions, genetic disorders attributable to environmental toxicants, deleterious effects of stratospheric ozone depletion and global warming are among the distressing consequences of greed-propelled destructive exploitation of Nature by man.

To save humanity from the blind journey to self-inflicted destruction and to arrest the cascading impoverishment of society, aggravated by widespread environmental pollution of land, water and air, there is an imperative need for universal awareness of the magnitude of the ill effects that await the coming generations. This awareness needs to be instilled at an early stage of the individual's life, so that commitment for environmental protection becomes a way of life.

Fundamental human values of truth, righteousness, peace, love and non-violence, which are in consonance with the laws of Nature and which have the attendant attributes of contentment, prudence, caring and sharing, conservation of resources and control over desires, have the potential to establish harmony between Nature and man and ensure sustained human welfare. A compassionate heart, rather than a sharp intellect, is more capable of facilitating reversal of the trend of environmental degradation.

Course objective:

This course on Environmental Studies is aimed at enabling students at the undergraduate level, the budding citizens of tomorrow, to understand the causes and implication of environmental degradation and consider the initiatives necessary to halt the decline and restore a sustainable framework of human progress.

Duration:

The course is designed to be taught over 48 contact sessions, at the rate of 4 sessions of one hour duration each, per week, in one semester or 2 sessions each, per week, during the academic year.

Structure:

The course consists of 9 modules or Units, covering the Multi-disciplinary Nature of Environmental Studies, the need for Value Orientation, Natural Resources, Eco-systems, Bio-diversity and its Conservation, Environmental Pollution, Social Issues and the Environment, Human Population and the Environment and a Field Work.

Course Material:

While course material provided by the UGC will form the basis for class room teaching and for field activities, appropriate inputs will have to be included, based on local environmental conditions and experiences.

Evaluation:

The Environmental Course is only for the first two semesters and there will one paper in each semester.

The evaluation pattern is entirely CIE ('I') (Continuous Internal Evaluation).

<u>Subject</u>	<u>Semester no.</u>	<u>Evaluation</u>	<u>Credits</u>	<u>Max Marks</u>
UENT-101	I	I	2	50
UENT-201	II	I	2	50
			<u>4</u>	<u>100</u>

I Semester:

- a) CIE item: Assignment/Field Work/Project 25 marks
- b) Summative Examination** 50 marks (1 ½ Hour duration)
(20 days before the End Semester Examination)

II Semester:

- a) CIE item: Assignment/Field Work/Project 25 marks
- b) Summative Examination** 50 marks (1 ½ Hour duration)
(20 days before the End Semester Examination)

** Papers are set by the respective teachers of the campuses and they will be submitted in time to the Controller of Examinations for presenting them to the Moderation Board for approval.

Question Paper Pattern of the Summative Examination

- 1) Section-A: Objective type – 10 marks
- 2) Section-B: Short answer type with internal choice to one question – 4x5 = 20 marks
- 3) Section-C: Long answer type with internal choice – 2x10 = 20 marks

UNIT WISE SYLLABUS

UENT-101 Environmental Studies and Human Values 2 Credits

Unit-1: The Multidisciplinary nature of environmental studies

2 hours

Definition, scope and importance

Need for public awareness.

Unit-2: Value Education and Environmental Studies

4 hours

- Concept of value based education.
- Need and importance of value based education in the modern age.
- Meaning and definition of values.
- Nature and characteristics of values.
- Organization of values under five core human values: Truth, Righteous conduct, Peace, Love and Non-violence.
- The five human values and their relation to Environment Protection and Conservation.
- Need for Public awareness - The role of values in environmental conservation.

Unit-3: Natural Resources:

6 hours

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 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 agricultural 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.
- g) Lessons from Nature – Welfare of all (trees, Sun)
- h) Respect Nature – Perceive its uniqueness and their interconnectedness – Practice diligence in use of resources.
- i) Need for shift from consumerism driven standard of living to human value based standard of life-marked by caring, sharing and compassion.
- j) Role of an individual in conservation of natural resources.
- k) Equitable use of resources for sustainable lifestyle.

Unit-4: Ecosystems:

6 hours

- 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, lakes, rivers, oceans, estuaries)
- Need to live in harmony with Nature – Feel kinship with Nature.
- Fundamental duties of a world citizen vis-à-vis their fundamental rights.

Unit-5: Biodiversity and its Conservation:

6 hours

- 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.
- Concept of unity in diversity.
- Feeling of oneness. Oneness in seeming multiplicity.
- Help ever Hurt never – show care and concern

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Unit-6: Environmental Pollution:

6 hours

Definition

- Causes, 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.
- Pollution case studies – Pollution caused by you hurts others and hurts you too.
- Disaster management: floods, earthquake, cyclone and landslides.
- Role of an individual in prevention of pollution.
- Individual welfare in relation to social welfare
- Develop urge to keep surroundings clean – it is a social obligation

Unit-7: Social Issues and the Environment:

6 hours

- 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.
- Introduction to legal support for environmental conservation.
- Concept of ceiling on desires
- Do not waste food, energy, time and resources.

Unit-8: Human Population and the Environment

6 hours

- Population growth, variation among nations.
- Population explosion – Family Welfare Programme.
- Environment and human health.
- Human Rights Vs. Human Responsibilities.
- Value Education
- Women and Child Welfare.
- Role of Information Technology in Environment and human health.
- Case Studies – Focus on simple living and high thinking.
- We need kind minds, large hands and efficient hands.

Unit-9: Field Work:

6 hours

- 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).

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