

**EL5CRT15 ENVIRONMENTAL AWARENESS, E-WASTE  
MANAGEMENT AND HUMAN RIGHTS**  
*(Common to BSc Electronics and BSc Electronics & Computer  
Maintenance)*

**SEMESTER V**

**Aims & Objectives of the course**

- Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues by developing and enhancing critical and creative thinking skills. It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers.
- Environmental Education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. It encourages character building, and develop positive attitudes and values.
- To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment and helps to protect the nature and natural resources.
- To help the students in acquiring the basic knowledge about environment and the social norms that provide unity with environmental characteristics and create positive attitude about the environment.
- To impart awareness on, Human rights and E-waste management

**Hours/Week** : 4  
**Contact hours** : 72  
**Credits** : 4

**Course Outline**

**Module I**

**Unit 1 : Multidisciplinary nature of environmental studies (2 Hours)**

Definition, scope and importance. Need for public awareness.

**Unit 2 : Natural Resources (8 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 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 and slides, soil erosion and desertification

- Role of individual in conservation of natural resources.
- Equitable use of resources for sustainable life styles.

### **Unit 3: 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 given ecosystem:- Forest ecosystem

### **Text Book:**

Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, 11nd Edition 2013

## **Module II**

### **Unit 1: Biodiversity and its conservation**

**(8 Hours)**

- Introduction
- Biogeographical classification of India

- Value of biodiversity: consumptive, productive, social, ethical, aesthetic and option values.
- 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

## **Unit 2: 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.
  - Role of an individual in prevention of pollution
  - Pollution case studies
  - Disaster management: floods, earthquake, cyclone and landslides.

### **Text Book:**

Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, 11nd Edition 2013

## **Module III Hours)**

**(14**

### **E- Waste**

E-waste growth- An overview, hazards of E-waste, what is E-waste, digital dump yard, how to minimize E-waste, Hazardous substances waste Electrical and Electronic Equipment, characteristics of pollutants, batteries, electrical and electronic components, plastic and flame retardants, circuit boards, pollutants in waste electrical and electronic equipment

### **Text Book:**

1. E-Waste Managing the Digital Dump Yard, Edited by Vishakha Munshi, ICFAI University Press (Chapter 1)

2. E-waste: Implications, Regulations and Management in India and Current Global Best Practices, Edited by Rakesh Johri, The Energy and Resources Institute, New Delhi (Chapter 1, 5)

**Module IV (14 Hours)**

**E-Waste Recycling**

Technologies for recovery of resources from electronic waste, resource recovery potential of e-waste, steps in recycling and recovery of materials-mechanical processing, technologies for recovery of materials

**Text Book:** E-waste: Implications, Regulations and Management in India and Current Global Best Practices, Edited by Rakesh Johri, The Energy and Resources Institute, New Delhi (Chapter 12)

**Module - V (14 Hours)**

**Unit 1 - Human Rights**

An Introduction to Human Rights, Meaning, concept and development - History of Human Rights-Different Generations of Human Rights-Universality of Human Rights- Basic International Human Rights Documents - UDHR ,ICCPR,ICESCR.-Value dimensions of Human Rights

**Unit 2 - Human Rights and United Nations**

Human Rights co-ordination within UN system- Role of UN secretariat- The Economic and Social Council- The Commission Human Rights-The Security Council and Human rights- The Committee on the Elimination of Racial Discrimination- The Committee on the Elimination of Discrimination Against Women- the Committee on Economic, Social and Cultural Rights-The Human Rights Committee- Critical Appraisal of UN Human Rights Regime.

**Unit 3- Human Rights National Perspective**

Human Rights in Indian Constitution - Fundamental Rights- The Constitutional Context of Human Rights-directive Principles of State Policy and Human Rights- Human Rights of Women-children -minorities-Prisoners- Science Technology and Human Rights- National Human Rights Commission- State Human Rights Commission- Human Rights Awareness in Education.

**Case Study:**

Screen the movie 'Samaksham' produced by Mahatma Gandhi University Creations. Students need to submit an assignment based on this movie.

## **REFERENCES**

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3. Dc A.K.Environmental Chemistry, Wiley Eastern Ltd.(Ref)
4. Down to Earth, Centre for Science and Environment (Ref)
5. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140pb (Ref)
6. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p (Ref)
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11. Rajagopalan. R, Environmental Studies from crisis and cure, Oxford University Press, Published: 2016 (TB)
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15. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (Ref)
16. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (Ref)
17. (M) Magazine (R) Reference (TB) Textbook

### **Human Rights**

1. Amartya Sen, The Idea Justice, New Delhi: Penguin Books, 2009.
2. Chatrath, K. J.S., (ed.), Education for Human Rights and Democracy (Shimla: Indian Institute of Advanced Studies, 1998)

- 3.** Law Relating to Human Rights, Asia Law House,2001.
- 4.** Shireesh Pal Singh, Human Rights Education in 21<sup>st</sup> Century, Discovery Publishing House Pvt.Ltd, New Delhi,
- 5.** S.K.Khanna, Children And The Human Rights, Common Wealth Publishers,1998. 2011.
- 6.** Sudhir Kapoor, Human Rights in 21<sup>st</sup> Century,Mangal Deep Publications, Jaipur,2001.
- 7.** United Nations Development Programme, Human Development Report 2004: Cultural Liberty in Today's Diverse World, New Delhi: Oxford University Press, 2004.