



MES COLLEGE ERUMELY

**COURSES RELATED TO
ENVIRONMENT AND SUSTAINABILITY**



M.S.W.

SW800301 ENVIRONMENT AND DISASTER MANAGEMENT

Total Credits: 3

Total Hours: 54

- Course Outcomes**
- Develop perspective about the interrelatedness of human life and environment.
 - Develop an understanding of problems arising out of environmental degradation and globalization.
 - Study the role of social work practice in tackling environmental issues and disaster management.

Course Outline

Module 1 Concepts: Environment & Ecology

UNIT 1: People and Environment Interaction: Environment, Components of environment, Factors affecting Environment, Types of environment.

UNIT 2: Hazards-Geographical, Climatic and Atmospheric, The Interrelatedness of living organisms and natural resources

UNIT 3: Political Ecology - a frame work for understanding sources and political ramifications of environmental change

Module 2 Global Environmental Crisis and its linkages to the development process

UNIT 4: Climate change and Global warming-Causes, Problems and interventions

UNIT 5: Environmental politics and resource development regimes

UNIT 6: Sustainable development - Management & Conservation change

UNIT 7: Energy Conservation and Management- Conventional and non-conventional sources of energy

Module 3 State of India's Environment

UNIT 8: Waste Management; Pollution - Air, Water, Soil, Noise, Light, Radioactive.

UNIT 9: Impact of Pollutants on Human Life, Prevention and control of pollutions

UNIT 10: Laws related to environment. National Environment policies, National green tribunal, Environment Issues in India

Module 4 Social Work and Environment:

UNIT 11: Green protocol, Green Social Work Initiatives

UNIT 12: Environment Education,

UNIT 13: Environment Ethics,

UNIT 14: Promotion Environment Movements, Environment Management –EIA.

Module 5 Disaster

UNIT 15: Definition, Natural and Human made disasters, Stages of Disaster. Multiple causes & effects; Vulnerability, Hazards.

UNIT 16: Major Natural disaster-Cyclone, Earth quake. Land slide, Flood, Forest fire, Tsunami

UNIT 17: Development & Disaster; Preventive Measures

Module 6 Disaster Management and Social Work Responses

UNIT 18: Stages –Preparedness, rescue, relief, reconstruction & rehabilitation. Disaster Risk assessment, Risk Reduction in communities, Resilience

UNIT 19: Natural hazards disaster management and Mitigation. Disaster management Cycle- Before disaster, During a disaster ,After disaster

UNIT 20: Psycho social intervention.

UNIT 21: Role of government and voluntary organizations. National and state disaster management authority, Disaster Management Policy

UNIT 22: Social Work responses in disaster management

References

- 1 Aggarwal, Nomita,(2003) *Social Auditing of Environmental Laws in India*,
- 2 Bharucha, Erach, (2005) *Text book of Environmental Studies for Undergraduate Courses*
- 3 Benimadhab Chatterjee, (2003) *Environmental laws: Implementation problems and perspectives*
- 4 Gulia, K S (2004), *Geneses of Disasters: Ramifications and Ameliorations*
- 5 Dasgupta, Rajdeep (2007) *Disaster management and rehabilitation*
- 6 Rajagopalan,R, (2009) *Environmental Studies : From Crisis to Cure*
- 7 Shukla,S K and Srivastava,P R (1992), *Human Environment: An Analysis*,
- 8 Shukla,S K and Srivastava,P R (1992), *Environmental pollution and chronic diseases*
- 9 Goel,P.K, (1996), *Environmental Guidelines and Standards in India*
- 10 Sharma J.P, (2004), *Comprehensive Environmental Studies*
- 11 Rajesh Dhankar (2006), *Environmental Studies*
- 12 Panday, P.N.,(2010), *A Text book of Environmental Pollution*

B.A. English

MAHATMA GANDHI UNIVERSITY
SYLLABI FOR CORE COURSES - UG PROGRAMMES
2017 ADMISSIONS ONWARDS

COURSE – Environmental Science and Human Rights

Course Code	EN5CREN01
Title of the course	Environmental Science and Human Rights
Semester in which the course is to be taught	5
No. of credits	4
No. of contact hours	90

Core module syllabus for Environmental Studies & Human Rights for under-graduate courses of all branches of higher education

VISION

The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. The United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 and World Summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment. It is clear that no citizen of the earth can afford to be ignorant of environment issues.

India is rich in biodiversity which provides various resources for people. Only about 1.7 million living organisms have been described and named globally. Still many more remain to be identified and described. Attempts are made to conserve them in ex-situ and in-situ situations. Intellectual property rights (IPRs) have become important in a biodiversity-rich country like India to protect microbes, plants and animals that have useful genetic properties. Destruction of habitats, over-use of energy resource and environmental pollution has been found to be responsible for the loss of a large number of life-forms. It is feared that a large proportion of life on earth may get wiped out in the near future.

In spite of the deteriorating status of the environment, study of environment has so far not received adequate attention in our academic programme. Recognizing this, the Hon'ble Supreme Court directed the UGC to introduce a basic course on environment at every level in college education. Accordingly, the matter was considered by UGC and it was decided that a

six months compulsory core module course in environmental studies may be prepared and compulsorily implemented in all the University/Colleges of India.

The syllabus of environmental studies includes five modules including human rights. The first two modules are purely environmental studies according to the UGC directions. The second two modules are strictly related with the core subject and fifth module is for human rights.

OBJECTIVES

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 develops 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 provides unity with environmental characteristics and create positive attitude about the environment.

Module I

(18 hours)

Unit 1: Multidisciplinary nature of environmental studies - Definition, scope and importance
Need for public awareness.

Unit 2: Natural Resources: 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 landslides – soil

erosion and desertification.

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

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 given ecosystem - Forest ecosystem

Module II

(26 hours)

Unit 1: Biodiversity and its conservation

Introduction - Bio-geographical classification of India

Value of biodiversity: consumptive use, productive use, 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

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

Unit 3: Social Issues and the Environment

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 - 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

Module III

(10 hours)

Jean Giono: *The Man Who Planted Trees*

K. Satchitanandan: Hiroshima Remembered

Module IV

(10 hours)

Bessie Head: Heaven is not Closed

Safdar Hashmi: Machine

Module V

(26 hours)

Unit 1: Human Rights

An Introduction to Human Rights: Meaning, concept and development - Three Generations of Human Rights (Civil and Political Rights, Economic, Social and Cultural Rights).

Unit 2: Human Rights and United Nations

Contributions, main human rights related organs - UNESCO, UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities

Unit 3: Environment and Human Rights

Right to Clean Environment and Public Safety

Issues of Industrial Pollution - Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies - Issues of Waste Disposal - Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation.

Conservation issues of Western Ghats: Mention Gadgil committee report, Kasthuri Rangan report.

Over-exploitation of ground water resources, marine fisheries, sand mining, etc.

Internal: Field study

Visit to a local area to document environmental grassland/ hill /mountain

Visit a local polluted site: Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds, etc

Study of simple ecosystem: pond, river, hill slopes, etc
(Field work Equal to 5 lecture hours)

REFERENCES

Bharucha, Erach. *Text Book of Environmental Studies for Undergraduate Courses*. University Press, 2nd Edition 2013 (TB)

Clark, R. S. *Marine Pollution*, Oxford: Clarendon (Ref)

Cunningham, W. P., Cooper, T. H., Gorhani, E & Hepworth, M. T. 2001 *Environmental Encyclopaedia*, Mumbai: Jaico. (Ref)

Dc A. K. *Environmental Chemistry*, Wiley Eastern. (Ref)

Down to Earth, Centre for Science and Environment (Ref)

Heywood, V. H & Watson, R. T. 1995. *Global Biodiversity Assessment*, Cambridge UP (Ref)

Jadhav, H & Bhosale, V. M. 1995. *Environmental Protection and Laws*. Delhi: Himalaya (Ref)

McKinney, M. L & Schock, R. M. 1996. *Environmental Science Systems & Solutions*. Web enhanced edition (Ref)

Miller T.G. Jr., *Environmental Science*, Wadsworth (TB)

Odum, E. P 1971. *Fundamentals of Ecology*. W. B. Saunders (Ref)

Rao, M. N. & Datta, A. K. 1987. *Waste Water Treatment* Oxford & IBII (Ref)

Rajagopalan, R. *Environmental Studies from Crisis and Cure*, Oxford UP, 2016 (TB)

Sharma B.K., 2001. *Environmental Chemistry*. Meerut: Geol. (Ref)

Townsend C. Harper J, and Michael Begon, *Essentials of Ecology*, Blackwell Science (Ref)

Trivedi R. K. *Handbook of Environmental Laws, Rules Guidelines, Compliances and Standards*, Vol I and II, Enviro Media (Ref)

Trivedi, R. K. and P. K. Goel. *Introduction to Air Pollution*. Techno-Science (Ref)

Wanger, K. D. 1998. *Environmental Management*. Philadelphia: W.B. Saunders (Ref)

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

Human Rights

Amartya Sen. *The Idea Justice*. New Delhi: Penguin, 2009.

Chatrath, K. J. S. Ed. *Education for Human Rights and Democracy*. Shimla: Indian Institute of Advanced Studies, 1998.

Law Relating to Human Rights. Asia Law House, 2001.

Shireesh Pal Singh, *Human Rights Education in 21st Century*. New Delhi: Discovery

S. K. Khanna. *Children and the Human Rights*. Common Wealth, 2011.

Sudhir Kapoor. *Human Rights in 21st Century*. Jaipur: Mangal Deep, 2001.

United Nations Development Programme. *Human Development Report 2004: Cultural Liberty in Today's Diverse World*. New Delhi: Oxford UP, 2004.

Six months compulsory core module course in Environmental Studies & Human Rights for undergraduates

Teaching Methodologies

The core Module Syllabus for Environmental Studies includes class room teaching and Field Work. The syllabus is divided into five modules covering 72 lectures. The first two modules will cover 44 lectures which are class room based to enhance knowledge skills and attitude to environment. The third and fourth is based on subject related environmental studies which will be covered in 20 lecture hours and would provide student a multidisciplinary knowledge on environmental issues in relation with the core subject. Human rights is also included in the fifth module and 8 lectures are set apart for that. Field study is one of the most effective learning tools for environmental concerns and is purely for internal evaluation. This moves out of the scope of the text book 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 are as 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 field activities be utilized.

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

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

Core Text for Module 3 & 4: *Greening Knowledge*

B.B.A.

BA5CRT23 ENVIRONMENT SCIENCE AND HUMAN RIGHTS

<p>Core Course</p>

<p>No. of credit : 4</p>

<p>No. of contact hour: 5</p>

MODULE I**Multidisciplinary nature of environmental studies**

Definition, scope and importance Need for public awareness.

Natural Resources : 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 landslides, soil erosion and desertification

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

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 given ecosystem:- Forest ecosystem

MODULE II**Biodiversity and its conservation**

Introduction, Biogeographical classification of India ,Value of biodiversity: consumptive use, productive use, 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

Environmental Pollution

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

Social Issues and the Environment- 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, 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

MODULE III**Introduction to Environment and Business**

Introduction of ways in which business has and is responding to environmental and business issues; business and sustainable development; issues of corporate/business greening.

MODULE IV**Green entrepreneurship**

What is green entrepreneurship, definition, meaning, scope, nature and characteristics. Green entrepreneurship in India. Difference between conventional and green entrepreneurship.

MODULE V

Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Human Rights and United Nations – contributions, main human rights related organs - UNESCO, UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities
 Environment and Human Rights - Right to Clean Environment and Public Safety:
 Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New
 Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal,
 Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee report, Kasthuriengan report. Over exploitation of ground water resources, marine fisheries, sand mining etc.

Internal: Field study

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc

(Field work Equal to 5 lecture hours)

REFERENCES

1. Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, IInd Edition 2013 (TB)
2. Clark.R.S., Marine Pollution, Clanderson Press Oxford (Ref)
3. Cunningham, W.P.Cooper, T.H.Gorhani, E & Hepworth, M.T.2001 Environmental Encyclopedia, Jaico Publ. House. Mumbai. 1196p .(Ref)
4. De A.K.Environmental Chemistry, Wiley Eastern Ltd.(Ref)
5. Down to Earth, Centre for Science and Environment (Ref)
6. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140pb (Ref)
7. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p (Ref)
8. Mekinney, M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
9. Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
10. Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
11. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBII Publication Co.Pvt.Ltd.345p (Ref)
12. Rajagopalan. R, Environmental Studies from crisis and cure, Oxford University Press, Published: 2016 (TB)
13. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut (Ref)
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16. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (Ref)
17. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (Ref)
18. (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 21st 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 21st 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.

B.C.A.

CS5CRT15 : IT & Environment (Core)

Unit 1 : (18 hrs.)

Multidisciplinary nature of environmental studies : Definition, scope and importance, Need for public awareness. (2 hrs)

Natural Resources: 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 landslides, soil erosion and desertification. Role of individual in conservation of natural resources. Equitable use of resources for sustainable life styles. (10hrs)

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 given ecosystem:- Forest ecosystem

(6 hrs)

Unit 2: (26 hrs)

Biodiversity and its conservation: Introduction, Biogeographical classification of India, Value of biodiversity: consumptive use, productive use, 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

(8 hrs)

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

Social Issues and the Environment :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, 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. (10hrs)

Unit 3: (10 hrs.)

Internet as a knowledge repository, academic search techniques, creating cyber presence. Academic websites, open access initiatives, opens access publishing models, Introduction to use of IT in teaching and learning -Educational software, Academic services–INFLIBNET, NPTEL, NICNET, BRNET . (10hrs)

Unit 4: (10 hrs.)

IT & Society- issues and concerns- digital divide, IT & development, the free software movement , IT industry: new opportunities and new threats, software piracy, cyber ethics, cyber crime, cyber threats, cyber security, privacy issues, cyber laws, cyber addictions, information overload, health issues- guide lines for proper usage of computers, internet and mobile phones. e-wastes and green computing, impact of IT on language & culture-localization issues- Unicode- IT and regional languages, Green Computing Concept. (10hrs)

Unit 5: (8 hrs.)

Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Human Rights and United Nations – contributions, main human rights related organs - UNESCO, UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights. **Human Rights in India** – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities

Environment and Human Rights - Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal, Protection of Environment **Conservation of natural resources and human rights:** Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee report, Kasthuriengan report. Over exploitation of ground water resources, marine fisheries, sand mining etc. (8 Hrs)

Internal: Field study

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc

References:

- 1 .“Technology in Action” Alan Evans, Kendall Martin, Mary Anne Poatsy, Pearson
2. Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, IInd Edition 2013 (TB)
- 3 .Clark.R.S., Marine Pollution, Clanderson Press Oxford (Ref)
4. Cunningham, W.P.Cooper, T.H.Gorhani, E & Hepworth, M.T.2001 Environmental Encyclopedia, Jaico Publ. House. Mumbai. 1196p .(Ref)
5. Dc A.K.Enviornmental Chemistry, Wiley Eastern Ltd.(Ref)
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7. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140pb (Ref)
8. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p (Ref)
9. Mekinney, M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
- 10 .Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
- 11 .Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
12. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBII Publication Co.Pvt.Ltd.345p (Ref)
13. Rajagopalan. R, Environmental Studies from crisis and cure, Oxford University Press, Published: 2016 (TB)
14. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut (Ref)
15. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (Ref)
16. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Stadards, Vol I and II, Enviro Media (Ref)
17. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (Ref)
18. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (Ref)
- 19.M-Magazine, R-Reference TB- Text Book

B. Com

**(Computer Application, Finance & Taxation,
Marketing, Office Management)**

25. United Nations Development Programme, Human Development Report 2004: Cultural Liberty in Today's Diverse World, New Delhi: Oxford University Press, 2004.
26. Monica Loss,,Green Marketing Strategies and Consumer Behaviour, Global Vision Publishing House
27. Robert Dahlstrom- Green Marketing: Theory, Practice and Strategies, Cengage Learning India Private Limited
28. A N Sarkar , Green Banking , Atlantic Publishers
29. Thomas Aronsson and Karl Gustaf Lofgren, Edgar Handbook of Environmental Accounting, Elgar Publishing
30. M Sarnagadharan and G Raju , Tourism and Sustainable Economic Developments: Indian and Global Perspectives – New Century Publishers
31. ICAI Study Material of Auditing
32. Right to Information Act, 2005

Complementary Course 3:

(Common for Finance and Taxation, Marketing, Travel and Tourism and Logistics Management streams)

E-COMMERCE

Instructional Hours-90

Credit-4

Objectives: This course intends to build competencies in students-

- *To understand the basic and emerging topics in E-Commerce*
- *To discuss E-Commerce from an enterprise point of view and think strategically about the role of IT for an organization's competitive position*

Module I

Overview of Electronic Commerce: Introduction to E-Commerce-Definition – Features -Advantages - Disadvantages and Challenges - Functions of E-Commerce – E-commerce transaction cycle – E-commerce opportunities - Types of E-Commerce- B2C-B2B-C2C- C2B- B2E- B2G- P2P - Models of E-Commerce - E-Commerce and E-Business – Transition to e-commerce in India

(20 Hours)

Module II

Application of E-Commerce: E-Banking - Online Share Trading - M-Commerce - E-Learning - E-Publishing - E-marketing – E-advertising – E-branding - Online Entertainment - Online Career Services - Electronic Data Interchange (EDI) - Enterprise Resource Planning (ERP) - Big Data Analysis - Cloud Computing - Google Analytics - Digital India Initiatives – E-Governance - E-Aadhar - Digital Locker - E-Sign – PayGov - Mobile Seva - eTaal **(25 Hours)**

Module III

E-payment Systems: E-payment requirements - Debit/Credit card payment - Net banking - Smartcard based payment – Digital token based payment - Digital wallet - e-cheque - e-cash – Cash on Delivery - Payment gateway - Risk in e-payment - Security Standard for Electronic Payment System **(12 Hours)**

Module IV

E-Commerce Security: Need for Security of E-Merchant/Service Provider, Security of Clients, Basic Security Issues in E-Commerce- security threats – security measures - Digital Signature - Digital Certificate - Cyber Law – Provisions of IT Act 2000 - Penalties and Adjudication – Cyber related provisions under IPC - E-Commerce and Consumer Protection in India. **(18 Hours)**

Module V

Setting up of E-Commerce Business: Website development - Open Source E-Commerce Platforms – Components of website - Promotion of Websites and Apps - Search Engine Optimisation - Search Engine Marketing - Social Media Optimisation - Viral Marketing - Electronic Customer Relationship Management (ECRM) - Electronic Supply Chain Management **(15 Hours)**

Suggested Readings

1. Daniel Minoli, E. M. (2014). *Web Commerce Technology Handbook*. New Delhi: Tata McGraw Hill.
2. Dave, C. (2014). *E- Business and E Commerce Manangement* . New Delhi: Prentice Hall.
3. Deital, H. M. (2013). *e-Business and e-Commerce for Managers*. New Delhi: Prentice Hall.
4. Goyal, D. (2010). *Management Information System*. New Delhi: Macmillan.
5. Joseph, P. (2012). *E Commerce- An Indian Perspective* (5 ed.). New Delhi: PHI.
6. Kamalesh, K. B. (2012). *E-Commerce, the Cutting Edge of Business*. New Delhi: Tata McGraw Hill.
7. Schneider Gary, P. (2015). *Electronic Commerce* (11 ed.). United Kingdom: Cengage Learning.

Complementary Course 3:

Programming in C

(Computer Application Stream)

Instructional hours- (54 theory and 36 practical)

Credit -4

Module I

Basic concepts of programming. Algorithm and flowchart. Importance of C, Basic structure of C programs, C character set, Identifiers and keywords, Constants, variables, Data types- primary, derived and user defined data types. Defining symbolic constants, Declaration of variables, Operators and expressions- Arithmetic, Relational, Logical, Assignment, Increment & decrement and conditional operators, Evaluation of expressions, operator precedence. Input and output operations- Formatted input and formatted output. **(10 Hours)**

Module II Decision making and Branching : Simple If statement, if else , nesting of if .. else statement, Else if ladder, switch statements. Looping- while, do while, for statements, nested loop, break, continue and go to statements. **(24 Hours)**

Module III

Arrays- one dimensional and two dimensional arrays, Character arrays and strings, declaring string variables, Reading strings from terminal and writing strings to screen String handling functions. **(24 Hours)**

Module IV

User defined functions – Need for user defined functions, Elements of function, Definition of functions, function call, Function declaration, Category of functions, Recursion, Scope, visibility and lifetime of variables. library functions: - Math.h, String.h, Conio.h and Stdio.h. **(12 Hours)**

Module V

Structures and Unions : Defining structure, Declaring structure variables, Accessing structure members, Unions- Definition, Difference between structure and Union, Pointer: Fundamentals - Understanding pointers, Declaration of pointer , Pointer expressions, **(20 Hours)**

Practical Session

1. Programs using branching statements
2. Programs using loops
3. Programs using one dimensional array and two dimensional array
4. Programs using User defined functions
5. Simple programs using pointers

Suggested Readings

Programming in ANSI C – E Balaguruswamy - Mc GrawHill Education

References

1. Let Us C – Yashavant Kanetker – BpB Publications

SEMESTER 6

Core Course: COST ACCOUNTING- II

Instructional Hours: 108

Credit: 4

Objectives: I To acquaint the students with different methods and techniques of costing, and to enable the students to identify the methods and techniques applicable for different types of industries.

Module I

Specific Order Costing- Job Costing – Meaning - Procedure- Batch Costing- Meaning- Procedure- Economic Batch Quantity- Contract Costing-Meaning- Objectives- Work-in-Progress Work Certified and Uncertified- Retention money and progress payments- Determination of Profit on Incomplete Contract- Treatment-Balance Sheet- Escalation Clause- Cost-plus Contract. **(20 Hours)**

Module II

Operating Costing- Definition- Transport costing- Canteen costing- Hospital costing **(15 Hours)**

Module III

Process Costing- Process Accounts- Process Losses- Normal and Abnormal losses- Abnormal Gain - Treatment- Joint Products and By-products- Methods of Apportioning Joint costs- Accounting for By-products **(24 Hours)**

Module IV

Marginal Costing and Break Even Analysis- Marginal Costing- Meaning-Definition- Difference between Marginal Costing and Absorption Costing - Differential Costing- Advantages and Disadvantages of Marginal Costing -Break Even Analysis- Cost Volume Profit Analysis- Break even chart- Simple Break Even Chart- Marginal Costing and Decision Making- Pricing Decisions- Key Factor- Make or Buy- Sales Mix- Acceptance of foreign Order. **(25 Hours)**

Module V

Budget and Budgetary Control- Meaning and Definition- Objectives- Steps in budgetary control- - Budget Manual Budget Committee- Budget key factor- Types of budgets- Advantages and limitations of budgetary control- Preparation of Cash Budget and Flexible Budget- Zero base Budgeting- Performance Budgeting. **(24 Hours)**

Suggested Readings

1. Jain, S.P., & Narang, K.L., Advanced Cost Accounting, *Kalyani Publishers, New Delhi.*
2. Iyengar, S. P., Cost Accounting, Sultan Chand & Sons, New Delhi.
3. Maheswary, S.N., Advanced Cost Accounting, Sultan Chand & Sons, New Delhi.
4. Arora, M. N., Cost Accounting, Vikas Publishing House Pvt. Ltd, New Delhi.
5. Shukla, M.C., & Grewal, T. S., Cost Accounting, Sultan Chand & Sons, New Delhi.

6. J Madegowda, Advanced cost accounting, *Himalaya Publishing House, Mumbai*
 7. Lall Nigam B M and Jain I C- Cost Accounting Principles and Practice- Prentice Hall of India

Core Course: ADVERTISEMENT AND SALES MANAGEMENT

Instructional Hours: 72

Credit: 3

OBJECTIVE- *To make the students aware of the strategy, concept and methods of advertising and sales promotion.*

Module I

Introduction : Advertising-Meaning-Origin and development - Objectives-Importance- Functions of advertising-Role of advertisement in marketing mix- Classification and Types of advertisement- Merits and demerits- Advertisement process- Advertising planning- Key players in advertising industry- Advertisement agencies- Types and functions of advertising agencies- -Advertisement campaign - Social, economical and legal aspects of advertisement- Ethics in advertisement- meaning- perceived role of advertisement-Forms of ethical violation- misleading advertisements- advertising to children- product endorsements- stereotyping, cultural, religious and racial sensitivity in advertising- obscenity in advertising-misleading and deceptive advertising- false claims- Advertisement Standards Council of India – Regulation of advertising in India **(18 Hours)**

Module II

Advertisement appeal and media- Advertisement appeal- Meaning- essentials of an advertisement appeal- types of appeal- advertisement copy- requisites of an effective advertisement copy-types of copy- Elements of copy-Lay out- Functions of lay out- Elements of layout- Principles of design and layout- copy writing- qualities of a good copy writer- -Copy testing and advantages- Advertising media-Media planning and strategy-Types of media- Media selection-Importance of media planning and selection- problems in media planning- Internet as an advertisement medium- Objects of internet advertisement- Advantages and disadvantages of internet advertising – Permission marketing- Steps in permission marketing- **(18 Hours)**

Module III

Adverting research-Need for advertisement research- Measuring the effectiveness of advertising- Importance of measuring the effectiveness- Methods: Pre-testing, Concurrent testing and Post- testing- Constraints in measuring the effectiveness- DAGMAR model **(10 Hours)**

Module IV

B. Sc Electronics

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 (10 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

Module II

Unit 1: Biodiversity and its conservation

(8 Hours)

- Introduction
- Biogeographical classification of India
- Value of biodiversity: consumptive use, productive use, 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

(8 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.

Unit 3: Social Issues and the Environment (10 Hours)

- 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
- 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

Module III (10 Hours)

E- Waste

Global E-waste growth- Global and local E-waste definition, Global e-waste/WEEE growth and migration, WEEE/e-waste growth in India, The Hazardous waste rules 2003, The Municipal Solid Wastes Rules 2000

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 1)

Module IV (10 Hours)

E-Waste Recycling

Optimal Planning for computer waste, Re-cycling of e-scrap in a global environment- opportunities and challenges, Technologies for recovery of resources from electronic waste.

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 10,12)

Module - V

(8 Hours)

Unit 1- Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Unit-2 Human Rights and United Nations – contributions, main human rights related organs - UNESCO, UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities

Unit-3 Environment and Human Rights - Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal, Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee report, Kasturi Rangan report. Over exploitation of ground water resources, marine fisheries, sand mining etc.

Internal: Field study

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc (Field work Equal to 5 lecture hours)

REFERENCES

1. Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, IInd Edition 2013 (TB)
2. Clark.R.S., Marine Pollution, Clarendon Press Oxford (Ref)
3. Cunningham, W.P.Cooper, T.H.Gorhani, E & Hepworth, M.T.2001 Environmental Encyclopedia, Jaico Publ. House. Mumbai. 1196p .(Ref)
4. Dc A.K.Environmental Chemistry, Wiley Eastern Ltd.(Ref)
5. Down to Earth, Centre for Science and Environment (Ref)

6. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140pb (Ref)
7. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p (Ref)
8. Mekinney, M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
9. Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
10. Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
11. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBII Publication Co.Pvt.Ltd.345p (Ref)
12. Rajagopalan. R, Environmental Studies from crisis and cure, Oxford University Press, Published: 2016 (TB)
13. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut (Ref)
14. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (Ref)
15. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Stadards, Vol I and II, Enviro Media (Ref)
16. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (Ref)
17. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (Ref)
18. (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 21st 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 21st 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.

B. Sc Psychology

PY5CRT 15 ENVIRONMENTAL PSYCHOLOGY AND HUMAN RIGHTS

Credit:4

Teaching Hours:3/week

Objectives

- To encourage students to do 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.
- To help students understand how their decisions and actions affect the environment, build knowledge and skills necessary to address complex environmental issues, as well as ways to take action that can keep our environment healthy and sustainable for the future. It encourages character building, and develop positive attitudes and values.
- To develop a sense of awareness among the students about the environment and its various problems and to help the students in realizing the interrelationship between man and the environment and helps to protect the nature and natural resources.
- To help the students to acquire the basic knowledge about the environment and the social norms that provide unity with environmental characteristics and create a positive attitude about the environment.
- To acquaint students with the nature and basic concepts of environmental psychology
- To synthesize diverse information relevant to human-environment relationships in the context of environmental psychology.

Module I

Unit 1 :Multidisciplinary nature of environmental studies

Definition, scope and importance

(2 hrs)

Need for public awareness.

Unit 2 : Natural Resources :

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 landslides, soil erosion and desertification
- Role of individual in conservation of natural resources.
 - Equitable use of resources for sustainable life styles. **(10 hrs)**

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 given ecosystem:- Forest ecosystem **(6 hrs)**

Module II**Unit 1: Biodiversity and its conservation**

- Introduction
- Biogeographical classification of India
- Value of biodiversity: consumptive use, productive use, 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**(8 hrs)**

Unit 2: Environmental Pollution

- 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. **(8 hrs)**

Unit 3: Social Issues and the Environment

- 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
- 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

(10 hrs)

Module III

Unit 1. Environmental psychology

- What is Environmental Psychology
- Nature and Characteristics of Environmental Psychology

Unit 2. Introduction to concepts in environmental psychology

Definition of:

- Environmental perception
- Environmental cognition
- Environmental attitudes, beliefs, values & dispositions

(8 hrs)

Module IV

Unit1. Environment and Human Behaviour

- Nature and Human Nature (Briefly)
- Theories of Environment-Behaviour Relationships(Briefly)-Arousal, Environmental Load, Adaptation Level and Ecological Approach.
- Personal space
- Territoriality
- Crowding

Unit 2. Practice in environmental psychology

- Changing Behavior to Save the Environment
- Environmental Impact Assessment(Briefly)

(12 hrs)

Module – V

Unit 1- Human Rights

An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Unit-2 Human Rights and United Nations

Contributions, main human rights related organs - UNESCO, UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities

Unit-3 Environment and Human Rights

Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal, Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee report, Kasthurirengan report. Over exploitation of ground water resources, marine fisheries, sand mining etc. **(8 Hrs)**

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2. Gifford, R. (2007). *Environmental psychology: Principles and practice* (4 ed.). Colville, WA: Optimal Books.

3. *Environmental Impact Assessment (EIA)* Retrieved from <http://www.moef.nic.in/division/introduction-8>

4. *Environmental Impact Assessment (EIA)*
Retrieved from <http://www.moef.gov.in/citizen/specinfo/eia.html>

Internal:**Field study**

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site– Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc

(Field work equal to 5 lecture hours)