

Uttarakhand Residential University, Almora

Syllabus- Environmental Studies

(For Undergraduation classes)

Unit 1- The multidisciplinary nature of Environmental studies

(2 lectures)

- Definition, scope and importance
- Need for public awareness of environment degradation: Disaster Management, flood earth quake, cyclone and landslides.

Unit 2- Natural Resources: Renewable and Non- renewable

(8 lectures)

- Forest resources: Use and overexploitation-deforestation, case studies, Timber
- Extraction, mining, dams and their effects on forests and tribal people
- Water resources: Use and overutilization of surface and ground water floods, droughts conflicts over water, dams-benefits and problems
- Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources and case studies
- Food resources: World food problems, changes caused by agriculture and overgrazing, efforts of modern agriculture, fertilizer- pesticide problem, water logging, salinity and case studies
- Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
- Land resources: Land as resources, Land degradation, man induced landslides, soil erosion and desertification
- Role of individual in conservation of natural resources
- Equitable use of resources for sustainable lifestyle

Unit 3- Ecosystems

(6 lectures)

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers consumers and decomposers
- Ecological succession
- Food chains food webs and ecological pyramids
- Introduction types characteristic features structure and function of the following ecosystems-
 - a- Forest ecosystem
 - b- Grassland ecosystem
 - c - Desert ecosystem
 - d- Aquatic ecosystem (ponds, stream, lakes, rivers, oceans, estuaries)

Unit 4- Biodiversity and its Conservation

(8 lectures)

- Introduction- Definition genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity- consumptive use ,productive use, social ethical and option values
- Biodiversity: global, national and local level

- India is 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 biodiversity: In situ and ex-situ conservation of biodiversity

Unit 5- Environmental Pollution

(8 lectures)

- Definition, causes, effects and control measures
- Air pollution, water pollution, soil pollution, marine pollution, noise pollution, thermal pollution, nuclear hazards
- Solid waste management causes, effect and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies.

Unit 6- Social Issues and the Environment

(7 lectures)

- 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
- Environment protection
- 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

Unit 7- Human Population and the Environment

(6 lectures)

- Population growth, variation among nations
- Population explosion-family welfare programme
- Environment and human health
- Human right
- Value education
- HIV/AIDS
- Women and child welfare
- Role of Information Technology in environment and Human health case study