

CHE110:ENVIRONMENTAL STUDIES

L:2 T:2 P:0 Credits:4

Course Outcomes: Through this course students should be able to

CO1 :: observe the current environmental issues and associated problems.

CO2 :: illustrate the basic knowledge of environment and its various components.

CO3 :: devise new approaches to reduce various types of environmental pollution.

CO4 :: identify the environment policies and practices.

Unit I

Introduction and natural resources : Multidisciplinary nature of environmental studies, Scope and importance: Concept of sustainability and sustainable development, Land resources: Land degradation, soil erosion and desertification, Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations, Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water, Energy resources: Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies

Unit II

Ecosystems : What is an ecosystem? structure and function of ecosystem, Energy flow in an ecosystem: food chains, food webs and ecological succession, ecological pyramids, Case studies of the following ecosystems : a)forest ecosystem b) grassland ecosystem c) desert ecosystem d) aquatic ecosystem

Unit III

Biodiversity and conservation : Levels of biological diversity : genetic, species and ecosystem diversity, Biogeographic zones of India, Biodiversity patterns and global biodiversity hot spots, India as a mega diversity nation, Endangered and endemic species in India, Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions, Conservation of biodiversity: In-situ and ex-situ conservation of biodiversity, Ecosystem and biodiversity services: ecological, economic, social, ethical, aesthetic and Informational value

Unit IV

Environmental pollution : Environmental pollution: types, causes, effects and controls; Air, Ill-effects of Fireworks, water, soil and noise pollution, Nuclear hazards and human health risks, Pollution case studies, ill-effects of Fireworks

Unit V

Environmental Policies & Practices : Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture, Environment Laws: Environment Protection Act, Air (Prevention & Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD), Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context, Solid waste management: Control measures of urban and industrial waste

Unit VI

Human Communities and the Environment : Human population growth: Impacts on environment, human health and welfare, Disaster management : floods, earthquake, cyclones and landslides, Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan, Environmental ethics: Role of Indian and other religions and cultures in environmental conservation, Environmental communication and public awareness, case studies

Text Books:

1. PERSPECTIVE IN ENVIRONMENTAL STUDIES by ANUBHA KAUSHIK, C P KAUSHIK, NEW AGE INTERNATIONAL PUBLISHERS

References:

1. TEXT BOOK OF ENVIRONMENTAL STUDIES by D. DAVE AND S. S. KATEWA, CENGAGE LEARNING

