

CHE110:ENVIRONMENTAL STUDIES

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

Course Outcomes: Through this course students should be able to

CO1 :: define current environmental issues and associated problems.

CO2 :: explain various components of environment and their role in maintaining the ecosystem and biodiversity.

CO3 :: determine the role of various environmental policies, practices and techniques to reduce environmental pollution.

CO4 :: analyze various environmental phenomena and their relationship with human communities.

Unit I

Introduction and sustainable development : introduction to environment, components of environment, spheres of earth, multidisciplinary nature, scope and importance of environmental studies, concept of sustainability, sustainable development, carrying capacity, pillars of sustainability, sustainable development goals

Unit II

Natural resources and ecosystem : introduction to natural resources, renewable and non renewable resources, land, water, forest and energy resources- their associated problems and remedial measures, role of individual in conservation of natural resources, ecosystem: structure and function of ecosystem, types of ecosystem, energy flow in an ecosystem: food chains and food webs, ecological pyramids, ecological succession

Unit III

Biodiversity and conservation : definition, levels of biological diversity- genetic, species and ecosystem diversity, importance of biodiversity: ecosystem services, ecological, economic, social, aesthetic and informational value, hot spots of biodiversity, threats to biodiversity: habitat loss, poaching of wildlife, biological invasions, human wildlife conflicts, species of conservation concern: extinct species, endangered species, vulnerable species, rare species, EDGE species, conservation of biodiversity: in-situ and ex-situ conservation, biogeographic zones of India, India as a mega diversity nation

Unit IV

Environmental pollution : definition, types and causes, effects and controls: air, water, soil, noise and radiation pollution, emerging pollutants, fireworks and their ill-effects, global warming, climate change, ozone layer depletion, acid rain and impacts on human communities and agriculture, case studies on pollution, solid waste management- control measures of urban and industrial waste

Unit V

Disaster management : natural disasters: water related (floods and drought), air related (cyclone and storms), earth related (earthquakes, landslides, avalanches, volcanic eruptions), manmade disasters: nuclear disasters, chemical disasters, biological disasters, transport accidents, disaster management: national disaster management framework, role of governmental agencies, NGOs, community-based organizations and media for disaster response

Unit VI

Human communities and environment : human population growth: impacts on environment, human health and welfare, environmental ethics, public awareness, cultural practices for environmental conservation, tribal populations and environmental conservation, environmental laws in India, environmental movements: Bishnois of Rajasthan, Chipko movement, Appiko movement, Jungle bachao andolan, Silent valley movement, Narmada Bachao Andolan, Tehri Dam conflict

Text Books:

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

References:

1. TEXT BOOK OF ENVIRONMENTAL STUDIES 2E by D. DAVE AND S. S. KATEWA, CENGAGE LEARNING
2. TEXTBOOK OF ENVIRONMENTAL STUDIES FOR UNDERGRADUATE COURSES by ERACH BHARUCHA, ORIENT BLACKSWAN PVT. LTD.

