

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 natural resources : multidisciplinary nature, scope and importance of environmental studies, concept of sustainability and sustainable development goals, natural resources and classification, land resources, land degradation, soil erosion and desertification, forest resources, causes and impacts of deforestation, water resources, use and over-exploitation of surface and ground water, conflicts over water, energy resources, renewable and non renewable energy resources, use of alternate energy sources, growing energy needs, conservation of natural resources and human role

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, hot spots of biodiversity, ecosystem and biodiversity services, ecological, economic, social, aesthetic and Informational value, threats to biodiversity: habitat loss, poaching of wildlife, biological invasions, endangered and endemic species in India, Conservation of biodiversity: In-situ and ex-situ conservation of biodiversity, biogeographic zones of India, India as a mega diversity nation

Unit IV

Environmental pollution : environmental pollution, types, causes, effects and controls of air, water, soil, noise and radiation pollution, emerging pollutants, ill-effects of Fireworks, case studies on pollution

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), Solid waste management: Control measures of urban and industrial waste, role of tribal populations in policy making, human wildlife conflicts

Unit VI

Human Communities and the Environment : human population growth: impacts on environment, human health and welfare, environmental movements: Chipko movement, silent valley movement, Bishnois of Rajasthan, Narmada Bachao Andolan, Appiko movement, Jungle bachao andolan, Tehri Dam conflict, environmental ethics, role of Indian and other religions and cultures in environmental conservation, public awareness, disaster management, floods, droughts, earthquake, cyclones and landslides

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