SEMESTER – I Compulsory Course (AECC - Environment Studies) BA and BSC Departments

Unit 1 : Introduction to environmental studies (2 lectures)
Multidisciplinary nature of environmental studies; Scope and importance; the need for environmental education. Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (3 Lectures)
What is an ecosystem? Structure: food chains, food webs and function of ecosystem:Energy flow in an ecosystem, nutrient cycle and ecological succession. Ecological Interactions. Case studies of the following ecosystems:
a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Biodiversity and Conservation (4 lectures)
a. Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
b. India as a mega-biodiversity nation; Endangered and endemic species of India
c. Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity:In-situ and Ex-situ conservation of biodiversity.
d. Nature reserves, tribal populations and rights (Niyamgiri-Vedanta, POSCO), and human wildlife conflicts in Indian context (Sundarban-Human-Tiger encounters).
e. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 4 : Environmental Pollution and Global Environmental Issues (6 lectures)
a. Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution.
b. Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
c. Nuclear hazards and human health risks (Chernobyl, 3 mile Island, Daiichi- Fukushima)
d. Solid waste management: Control measures of urban and industrial waste,special reference to e-waste, Biomedical waste.
e. Pollution Tragedies: Love canal, Bhopal Gas, Endosulfan, Minamata and Flint water

TEXT BOOKS :

SUGGESTED READINGS :
2. Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India Univ.of California Press.
UNIT 5: NATURAL RESOURCES: RENEWABLE AND NON-RENEWABLE RESOURCES

A. Land resources and landuse change; Land degradation, soil erosion and desertification.

B. Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

C. Disaster management: floods, earthquake, cyclones and landslides. Resettlement and rehabilitation of project affected persons; case studies.

D. Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

UNIT 6: ENVIRONMENTAL MANAGEMENT: LAWS, POLICIES & PRACTICES


Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. Green Politics, Earth Hour, Green Option Technologies, ISO standards: ISO 9000 and 14000. Environmental communication and public awareness, Role of National Green Tribunal; EIA Formulations, stages, Merits and demerits: case studies (e.g., CNG vehicles, Bharat IV stage)

Environment Laws: Environment Protection Act (1986); Air (Prevention & Control of Pollution) Act (1981); Forest Conservation Act (1980); Water (Prevention and control of Pollution) Act (1974); Wildlife Protection Act (1972).

UNIT 7: HUMAN POPULATION AND THE ENVIRONMENT


Environmental movements: Chipko, Silent valley, Bishnoi, Narmada BachaoAndolan, Nava Danya.

Role of Information Technology (IT) in environment and Human Health

UNIT 8: FIELD WORK

Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.

Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.

Study of common plants, insects, birds and basic principles of identification.

Study of simple ecosystems-pond, river, Delhi Ridge, etc.

TEXT BOOKS:


SUGGESTED READINGS:


