

**DIRECTORATE OF DISTANCE EDUCATION
UNIVERSITY OF NORTH BENGAL
SYLLABUS FOR
BA PROGRAMME IN ENVIRONMENTAL SCIENCE: 3 YEARS (6 SEMESTERS)
UNDER CHOICE BASED CREDIT SYSTEM (CBCS)**

DETAILED SYLLABUS OF BA PROGRAMME IN ENVIRONMENTAL STUDIES UNDER CBCS

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)

AECC – 1: Environmental Studies (SEMESTER – I)

Unit 1: Introduction to environmental studies

- Multidisciplinary nature of environmental studies
- Scope and importance; Concept of sustainability and sustainable development

Unit 2: Ecosystems

- What is an ecosystem?
Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. 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: Natural Resources: Renewable and Non – renewable Resources

- Land resources and land-use change; 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 (international & inter-state), Dams – benefits and problems.
- Food resources: World food problems, changes caused by agriculture and over-grazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.
- Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies

Unit 4: Biodiversity and Conservation

- Levels of biological diversity: genetic, species and ecosystem diversity; Bio-geographic zones of India; Biodiversity patterns and global biodiversity hotspots.
- India as a mega-biodiversity nation; Endangered and endemic species of 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 5: Environmental Pollution

- Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management: Control measures of urban and industrial waste.
- Pollution case studies

Unit 6: 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.

Unit 7: Human Communities and the Environment

- Human population growth: Impacts on environment, human health and welfare.
Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management: floods, earthquake, cyclones and landslides.
- Water conservation, rain water harvesting, watershed management.
- Wasteland reclamation.
- Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication & public awareness, case studies (e.g., CNG vehicles in Delhi).

(To be chosen from English, Bengali, Nepali and Hindi)

AECC – 2: English Communication (SEMESTER – III)

Common approved syllabus to be followed.

AECC – 2: Bengali Communication (SEMESTER – III)

Common approved syllabus to be followed.

AECC – 2: Nepali Communication (SEMESTER – III)

Common approved syllabus to be followed.

AECC – 2: Hindi Communication (SEMESTER – III)

Common approved syllabus to be followed.

