

SYLLABUS
ENVIRONMENTAL STUDIES (AECC2)
ASSAM UNIVERSITY: SILCHAR

(2nd Sem, B.A, B.Sc and B.Com)

Total Marks : 50 (4 Credits)

Pass Marks : 20

UNIT 1: Introduction to Environmental Studies and Ecosystems (10 marks)

- Definition, scope and importance of environmental studies; Multi-disciplinary nature of environmental studies; Need for public awareness.
- Concept of ecosystem; Producers, consumers and decomposers; Energy flow in an ecosystem; Food chains and food webs; Ecological pyramids; Ecological succession.
- Nutrient cycles (Carbon cycle and nitrogen cycle).
- Major ecosystems: Forest ecosystem; Grassland ecosystem, Desert ecosystem and Aquatic ecosystem (e.g. pond, lake, river and ocean)

UNIT 2: Natural Resources : Renewable and Non-renewable Resources (10 marks)

- Land Resources : Land change, land degradation, soil erosion and desertification.
- Forest Resources : Effects of deforestation due to timber-logging, shifting cultivation, mining and dams on forests and tribal populations.
- Water Resources : Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (inter-state and international).
- Energy Resources : Renewable and non-renewable energy resources; use and importance of alternative energy resources.

UNIT 3: Biodiversity and conservation (10 marks)

- Definition, levels of biodiversity (genetic, species and ecosystem diversity); Biogeographic zone of India; Biodiversity patterns and global biodiversity hot spots.

- Biodiversity of India : India as a mega-biodiversity nation; Endangered and endemic biodiversity of India with special reference to North East India.
- Threats to Biodiversity: Habitats loss, poaching of wildlife, man-wildlife conflicts in Indian context, biological invasions.
- Conservation of Biodiversity : *In-situ* and *ex-situ* conservation of biodiversity.

UNIT 4: Environmental pollution, Environmental Policies and Practices (10 marks)

- Environmental pollution: Types (Air, water, soil and noise pollution), causes, effects and controls.
- Solid waste management : Control measures of urban and industrial waste; Nuclear hazards and human health risks.
- Climate change, global warming, ozone layer depletion, acid rain and impact on human communities and agriculture.
- Environment Laws: Environment Protection Act; Air (Prevention and control of pollution) Act; Water (Prevention and control of pollution); Wildlife Protection Act; Forest Conservation Act.
- Nature reserves, Sustainability and sustainable development; tribal population and right.

UNIT 5: Human Communities and the Environment (10 marks)

- Human population growth: Impact on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management: floods, earthquake, cyclones and landslides.
- Environmental movement : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of different Indian religions and cultures in environmental conservation.
- Environmental communication and public awareness.