



University of Gour Banga
UG Syllabus for Environmental Studies
 under CBCS System With effect from Session: 2019-2020

Syllabus for Science, Arts and Commerce (Hons. + General) Students

Ability Enhancement Course (AEC-1)
(Included as compulsory Course in Semester-I)

Full marks: 40+10 = 50

Credits: 2

Subject: Environmental Studies (ENVS)

Outline of Syllabus

Paper content	Group	Marks	Duration
Theory	A	40	1 hr.
Project work (to be assed internally)	B	10	To be completed during the semester period

Details of the Syllabus

GROUP-A (THEORY)

Unit 1: Introduction to Environmental Studies

- Definition, Nature, Scope and Importance of Environmental studies, Multidisciplinary nature of Environmental studies, Types and Components of Environment.

Unit 2: Natural Resources: Renewable and Non-renewable Resources

- **Energy resources:** Renewable and non-renewable resources, use of alternative energy sources, growing energy needs -- case studies.
- **Water resources:** Distribution of water on earth, use and over exploitation of water on earth, floods, drought, conflicts over water (international and national), Dams -- benefits and problems.
- **Forest Resources:** Types and importance of forest resources, use and over exploitation, Deforestation and its effects. Conservation and protection of Forest, Wild life management.
- **Mineral resources:** Types and importance of minerals and exploitation, effect of extraction on environment.

Unit 3: Ecosystem

- Concept of an ecosystem, structure and function of an ecosystem, different types of ecosystems: Forest, grassland, desert, aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries). Energy flow in an ecosystem, food chain, food webs and ecological pyramids, energy flow models.
- Definition and classification of biomes, ecological succession, biogeochemical cycles, pattern and basic types, biogeochemical cycles of nitrogen and phosphorous.

Unit 4: Biodiversity and its Conservations

- Definition, levels of biodiversity, genetic, species and ecosystem diversity, Biodiversity hotspot and Mega biodiversity countries: an overview, Value of biodiversity, Threats to biodiversity, Man-wildlife conflicts, Biological - invasions.
- Convention of biodiversity: in-situ and ex-situ conservations, endangered and endemic species(plants and animals).

Unit 5: Environmental Pollution

- Definition, types , causes, effects and controls
- Air , water , soil and noise pollution causes and consequences
- Thermal, nuclear and marine pollution causes, present status and consequences.
- Solid waste management causes, effects and control of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Pollution: case studies.
- Disaster management: flood, earthquake, cyclone and landslides.

Unit 6: Environmental Policies and Practices

- Climate change, Global warming, Ozone layer depletion, Acid rain and its impacts on human communities and Agriculture.
- Environmental laws: Environment Protection Act , 1986 ; Air (prevention and control of pollution) Act, 1981; Water(prevention and control of pollution) Act, 1972; Wild life protection Act 1972; Forest conservation Act 1920, 1988 ; International agreements Montreal protocols, 1987 and Kyoto protocols, 1997 and Convention on Biological Diversity(CBD).

Unit 7: Human Communities and the Environment:

- Human population growth; impact on environment, human health and welfare.
- Water conservation, rain water harvesting, wetland resources and conservations.
- Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: role of religions and cultures in environmental conservations.
- Environment and human health: Concept of human hygiene and different vector borne diseases.
- Human rights, Value education and role of information technology in environmental communication and public awareness.

GROUP: B (PROJECT WORK)

(Any one of the given projects to be selected in consultation with concerned subject teacher)

- Visit to an area to document environmental assets: river/ forest/ flora/ fauna etc.
- Visit to a local site - urban/ rural/ industrial/ agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystem pond, river etc.

Note: (i) Project work should be hand written ;(ii) Ink pen or ball point pen be used other than BLACK and RED colour ; (iii) Project report must be at least of FIVE pages excepting the cover page.

General Instruction to the Colleges for Environmental Studies

1. The project work topic will be assigned by the respective faculty member/teacher of the concerned college who is/are dealing with the subject paper.
2. The project proposal (**any one of the given list**) should be submitted in single hard copy before final examination as notified by the faculty/teacher in knowledge of the Principal/Teacher-in Charge of the college concerned. The project papers of all of the students to be kept by the college concerned and that to be submitted to the Controller of Examinations, UGB as and when asked for the same.
3. Format of the Project: (i) Title of the topic (ii) Introduction (iii) Data collection and representation of data (Attach photographs, diagrams etc.), (iv) data analysis (v) Relevance and significance (vi) conclusion
4. The marks allotment for the submission of the project report is as follows:
 - a) Scientific content: 5
 - b) Layout of submission: 3
 - c) Relevance and significance: 2