

University of Gour Banga

UG Syllabus for Environmental Studies, NEP 2020



Value Addition Course (VAC)

(Included as compulsory course in Semester-I)

Full marks: 25

Credits: 2

Subject: Environmental Studies (ENVS)

Outline of the Syllabus

Paper content	Question type	Marks	Duration
Theory	MCQ	25 (1 mark for each question)	1 hour

Details of the Syllabus

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, uses 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 phosphorus

Unit 4: Biodiversity and its conservation

- 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

Unit 6: Environmental Policies and Practices

- Climate change, Global Warming, Ozone Layer Depletion, Acid rain and its effect on human communities and agriculture
- Environmental laws: Environmental Protection Act, 1986; Air (prevention and control of pollution) Act, 1981; Water (prevention and control of pollution) Act, 1972; Wildlife Protection Act 1972; Forest Conservation Act 1920, 1988; International agreements Montreal Protocol, 1987 and Kyoto Protocol, 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