University of Calcutta

Common ValueAdded Courseson Environmental Studies

ENVS01: Fundamentals of Environment

Semester -I

Total Marks 50 *(Credit -2)*

[Marks obtained in this course will be taken to calculate SGPA & CGPA]

Theory

Unit 1 Introduction to environmental studies — 3 lectures

- Multidisciplinary nature of environmental studies
- Scope and importance
- Concept of sustainability, sustainable development,and sustainability goals
- Low carbon lifestyle: Mission LIFE

Unit 2 Ecology and Ecosystems — 7 lectures

- Concept of ecology,ecosystem, and ecosystem services
- Structure and function of ecosystem
- Energy flow in an ecosystem
- Ecological pyramid
- Food chain and food web (Terrestrial and aquatic ecosystems)
- Basic concept of population and community ecology
- Ecological succession

Unit 3 Natural Resources — 6 lectures

- Concept of renewable and non-renewable resources
- Land resources and landuse change: land degradation, soil erosion and desertification.
- Forest resources: importance, Deforestation- causes, consequences, and remedial measures
- Water: use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources: Environmental impacts of energy generation, use of alternative and nonconventional energy sources, green energy.
- Natural resource accounting

Unit 4 Biodiversity and Conservation — 7 lectures

- Levels of biological diversity: genetic, species and ecosystem diversity
- Biogeographic zones of India,Biodiversity hot spots, Endemism,India as a mega-diversity nation
- Threats to biodiversity, IUCN threat categories
- In-situ and Ex-situ conservation of biodiversity, Protected area network
- Role of indigenous communities in biodiversity conservation, Peoples Biodiversity Register, Bioprospecting and Biopiracy

Unit 5 Environmental Pollution — 7 lectures

- Environmental pollution: concepts and types.
- Air, water, soil, noise and marine pollution- causes, effects and controls
- Concept of hazards waste and human health risks
- Solid waste management: Control measures of municipal, biomedical and e-waste.
- Climate change, global warming, ozone layer depletion, acid rain and their impacts on human communities and agriculture

Total30 lectures

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Common Value Added Courses on Environmental Studies

ENVS 02: Environmental Education

Semester -II

Total Marks-50*(Credit -2)*

[Marks obtained in this course will be taken to calculate SGPA & CGPA]

Unit 1	**Environmental Education**	4 lectures
	• Concept, definition, and significance of environmental education • Genesis of environmental education, Tiblisi Declaration 1977 • Philosophy of environmental education • Environmental awareness vis a vis environmental education	
Unit 2	**Rules and regulations of environment**	6 lectures
	• Necessity of rules and regulations, different types of rules and regulations, mistakes in implementing of environmental rules, problems in implementing environmental rules. Environment Laws in India: Wildlife (Protection) Act; Forest (Conservation) Act; Water (Prevention and control of Pollution) Act; Air (Prevention & Control of Pollution) Act; Environment Protection Act; Biodiversity Act. • International agreements: Montreal Protocol, Kyoto protocol and climate negotiations; Convention on Biological Diversity (CBD).	
Unit 3	**Human Communities and the Environment**	6 lectures
	• Human population growth: Impacts on environment, human health, and welfare. • Concept of Resettlement and rehabilitation. • Environmental movements: Bishnois, Chipko, Silent valley, Big dam movements. •Environmental ethics: Types, ecofeminism, role of cultures in environmental conservation	
Unit 4	**Disaster Awareness**	8 lectures
	• Fundamentals of hazard, disaster, risk and vulnerability • Disaster classification, Natural Disasters-floods, earthquake, cyclones, tsunami and landslides; Manmade Disaster. • Case Studies: Minamata disaster, Bhopal gas disaster, Fukushima nuclear disaster, Kedarnathflood, Cyclone *Jila*, COVID-19 • Disaster management, Disaster warning systems	
Unit 5	**Role of environmental education in protecting environment**	6 lectures
	• Lifelong learning procedure, Pedagogy in environmental education, Formal and informal environmental education (Exhibition, role playing ability, quiz, debate, field trip, demonstration, project, poster presentation, seminar, eco-club) • Role of NGOs and government institutions • Role of information technology and mass media: Print, Electronic,and Social media	
	Total	30 lectures

Suggested Reading:

Reference: Das, S., (2023) Environmental Education, Sanjib Prakasan, Kolkata