

## **SARDAR PATEL UNIVERSITY, MANDI**

### **Environment Education**

Value Added Course (VAC)

Course Code: BENVI-VAC-201

#### **Course Structure:**

Credits: 2

Teaching Hours: 30

Maximum Marks: 50

End Semester Examination: 35 Marks

Internal Assessment: 15 Marks

#### **Course Objectives**

- To develop environmental awareness among students.
- To understand ecosystems, biodiversity and natural resources.
- To familiarize students with environmental challenges and climate change.
- To promote sustainable lifestyles and environmental responsibility.

#### **Course Learning Outcomes**

After successful completion of the course, students will be able to:

- Understand basic environmental concepts and ecosystem functioning.
- Appreciate the importance of biodiversity and natural resources.
- Identify major environmental challenges and climate change impacts.
- Apply principles of sustainable development in daily life.
- Understand the role of environmental laws and citizen participation.

#### **Scheme of Examination**

##### **Internal Assessment (15 Marks):**

Class participation and attendance: 5 marks

Assignment/Project/Field Report/Presentation: 10 marks

End Semester Examination (35 Marks): Based on both units.

##### **Pattern of End-Semester Question Paper (35 marks):**

- There shall be **Five questions in all**. Students have to **attempt three questions** in all,
- **Question No. 1 shall be compulsory for 10 marks** and will consist of short-answer type questions covering the entire syllabus. There shall be **no choice** in this question.
- The remaining **Four questions** shall be distributed over **Two Units**, with **two questions from each Unit**. Students shall attempt **one question from each Unit**.
- Each long-answer question shall carry **12.5 marks**.

## **Course Contents**

### **Unit I: Environment, Natural Resources and Sustainable Development (15 Hours)**

**Environment:** Concept, components (Atmosphere, Hydrosphere, Lithosphere, Biosphere) and importance;

**Environmental studies:** Multidisciplinary nature of environmental studies; Scope and importance;

**Ecosystems:** structure, functions and ecosystem services (Provisioning, Regulating, Cultural, and Supporting);

**Biodiversity:** levels, values, threats and conservation (in-situ and ex-situ);

**Natural resources:** forest (Importance of forests, deforestation: causes and impacts), water (Use and over- exploitation of surface and ground water), land resources (Land degradation, soil erosion and desertification) and energy resources (renewable and non-renewable energy);

**Sustainable Development:** concept and principles, Sustainable Development Goals (SDGs), Lifestyle for Environment (LiFE) and sustainable practices.

### **Unit II: Environmental Challenges, Climate Change and Environmental Management (15 Hours)**

**Environmental pollution:** Air, water, soil and noise pollution, causes, impacts and control measures;

**Climate change:** greenhouse effect, global warming, impacts, adaptation and mitigation;

**Environmental management:** Waste management, circular economy and Environmental Impact Assessment (EIA);

**Overview of Environmental laws and policies in India:** Wildlife Protection Act, 1972; Water Act, 1974; Forest (Conservation) Act 1980; Air Act, 1981; Environment Protection Act, 1986;

**Overview of International environmental agreements:** UNFCCC, Montreal Protocol, Kyoto Protocol, Convention on Biological Diversity (CBD);

**Human population growth:** Impacts on environment, human health and welfare.

**Disaster management:** floods, earthquake, cyclones, landslides and drought.

## Suggested Field-Based Activities

Students shall undertake **one field-based activity/project** and submit a **handwritten report**. The activity may be selected from the following:

1. Participation in campus cleanliness drives, tree plantation campaigns, nature camps, or environmental awareness programmes.
2. Documentation and assessment of campus biodiversity, including identification of common plant and animal species.
3. Study of campus environmental management practices, including solid waste management, water conservation, rainwater harvesting, and sewage treatment systems.
4. Documentation of local environmental assets such as forests, rivers, wetlands, lakes, grasslands, flora, fauna, and other natural resources.
5. Field visit to a polluted site (urban, rural, industrial, or agricultural) and assessment of the sources and impacts of pollution.
6. Observation and identification of common plants, insects, birds, and other locally occurring organisms using basic taxonomic principles.
7. Study of simple ecosystems such as ponds, rivers, lakes, wetlands, dams, forests, or grasslands, with emphasis on their structure, functions, and ecological significance.
8. Survey of local environmental issues and community-based conservation practices.
9. Assessment of household or campus waste generation and preparation of a waste management plan.
10. Documentation of climate change impacts and adaptation practices in the local area.

## Report Submission:

Each student shall submit a handwritten field report (5–10 pages) containing objectives, methodology, observations, photographs/sketches (where applicable), findings, and conclusions.

## Suggested Readings:

1. Bharucha, E. *Textbook of Environmental Studies for Undergraduate Courses*. Universities Press, Hyderabad.
2. Rajagopalan, R. *Environmental Studies: From Crisis to Cure*. Oxford University Press.
3. Kaushik, A. and Kaushik, C.P. *Perspectives in Environmental Studies*. New Age International Publishers.
4. Cunningham, W.P. and Cunningham, M.A. *Principles of Environmental Science*. McGraw-Hill Education.
5. Singh, J.S., Singh, S.P. and Gupta, S.R. *Ecology, Environment and Resource Conservation*. Anamaya Publishers.
6. Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India – Environmental Acts and Policies.
7. V.K. Ahluwalia, *Environmental Pollution, and Health*, The Energy and Resources Institute (TERI).
8. UNEP and UNDP publications on Sustainable Development Goals and Climate Change.