

**WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION  
SYLLABUS FOR CLASSES XI AND XII**

**SUBJECT : ENVIRONMENTAL STUDIES (ENVS)**

## **Course overview of ENVS**

The Environmental Studies course is a vast field that encompasses many fields. It integrates various sciences and technologies to get an understanding of environment-related issues. The Environmental Studies Course covers topics such as human activity and environmental sustainability, societal development and its effect on environment, sustainable development in agriculture, global and national energy consumption scenario, energy conservation strategies, effect ecology, biodiversity, pollution control, climate change, sustainable resource management, Environmental law and managements. Environmental Studies provides an overview of how science affects our environment. Study in this subject focus on interactions between the air water and soil with living organisms. Environmental Studies is a challenging field that deals with the study of natural and human-induced changes in the environment. The course will not only help expand knowledge of students on natural processes, but it will also make students more aware of our role on the environment. Studies in environmental studies will help students to make better decisions for sustainable living and environmental protection.

## **Course outcome of ENVS**

At the end of the course, students will be able to

1. Understand Environmental Issues. The Environmental Studies course provides a comprehensive understanding of ecology, biodiversity, pollution control, climate change, environmental laws and environmental management issues, including the challenges it faces.
2. Build Career in Environmental Studies and associated sectors. There is a growing demand for professionals with expertise in the Environmental Science course and sustainability.
3. Peruse Research career in environmental studies. The Environmental Studies course often includes research components, allowing students to engage in meaningful research projects that contribute to scientific knowledge and address real-world environmental problems.
4. Apply proficiency in analytical methods, critical thinking, communication, and leadership skills sufficient to make a contribution in environmental and related fields.
5. Students will learn to reflect critically their role and identity as citizen, consumer in this complex interconnected world

## Class XI

### SEMESTER – I

Course Code: ENVS

Course Code: (Theory) ENVS

Full Marks: 40

Contact Hours.: 100

Chapter	Subtopics	Marks	Hours
Man, Environment and Sustainability	<ul style="list-style-type: none"><li>– Introduction</li><li>– Dimensions of Environment-Physical, Biological &amp; Social</li><li>– Human Being as a Rational and Social Partner in Environmental Actions, Green Revolution: Impact of Human Activities on the Environment</li><li>– Society and Environment in India: Indian Traditions, Customs and Culture-Past and Present</li><li>– Population and Environment</li><li>– Impact of Human Activities on the Environment</li><li>– Concept of Sustainability</li><li>– Conclusion</li><li>– Exercise</li></ul>	20	30
Environment and Development	<ul style="list-style-type: none"><li>– Introduction</li><li>– Social factors Affecting Development- Education, Employment, Child Marriage and child Labour, Health, Social Security, Cultural and ethical values.</li><li>– Impact of Development on Environment – Changing Pattern of Land</li><li>– Use, Land Reclamation, Deforestation, Resource Depletion, Pollution and Environmental Degradation</li><li>– Global Development Scenario-Some Facts: Ramsar Convention (1971); Stockholm Conference 1972; United Nations Conference on Environment and Development 1992; Rio de Janeiro (Rio Declaration, Agenda 21, Convention on Biodiversity); Montreal Protocol 1987; Basel Convention (1989, 1992); UNFCCC, Kyoto Protocol, 1997, Copenhagen and Paris summits; World Summit at Johannesburg, 2002, IPCC, UNEP.</li><li>– Role of the Society in Development and Environment-Public Awareness Through Education, Eco-clubs, Population Education Programme, Campaigns, Public Participation in Development</li><li>– Exercise</li></ul>	20	70

## Class XI

### SEMESTER – II

**Course Code: ENV5**

**Course Code: (Theory) ENV5**

Full Marks: 40

Contact Hours.: 80

<b>Chapter</b>	<b>Subtopics</b>	<b>Marks</b>	<b>Hours</b>
Sustainable development and agriculture	<ul style="list-style-type: none"><li>– Introduction</li><li>– Concept of Environment and Sustainable Development</li><li>– Concept of Sustainable Consumption</li><li>– Need of Sustainable Development for Improving Quality of Life for the Present and Future</li><li>– Concept of Sustainable Agriculture: Element, Need, Action Plan</li><li>– Importance of Soil for Crops</li><li>– Irrigation Systems: Old and Modern System</li><li>– Use of Manure and Fertilizers: Chemical and biofertilizers</li><li>– Crop Protection –Type of Pests and Pesticides, Control- Measures, Agrochemicals, and their impact on the environment</li><li>– Exercise</li></ul>	20	40
Energy	<ul style="list-style-type: none"><li>– Introduction</li><li>– Changing Global Pattern of Energy Consumption</li><li>– Energy Consumption as a Measure of Quality of Lifestyle</li><li>– Energy Scenario in India</li><li>– Energy Sources</li><li>– Fossil fuel Harnessing and Environmental Consequences</li><li>– Energy Conservation- Efficient Production and Efficient Uses</li><li>– Planning &amp; Management of Energy</li><li>– Exercise</li></ul>	20	40

**Course Code: ENVS**  
**Course Code: (Project) ENVS**

Full Marks: 20

Contact Hours.: 20

<b>Chapter</b>	<b>Subtopics</b>	<b>Marks</b>	<b>Hours</b>
<b>Home Assignment</b>	<b>PROJECT- I</b> <ul style="list-style-type: none"><li>- Application of Biofertilizer in Agriculture</li><li>- Eco-friendly unconventional source of Energy</li><li>- Plantation Programme in your locality</li><li>- Social Issues (Child Labour/Child Marriage/ Child Education, etc.) in your locality</li></ul>	10	10
<b>Tutorial</b>		5	5
<b>Remedial</b>		5	5

## Class XII

### SEMESTER – III

Course Code: ENVS

Course Code: (Theory) ENVS

Full Marks: 40

Contact Hours.: 100

Chapter	Subtopics	Marks	Hours
Principles of ecology	<ul style="list-style-type: none"><li>– Basic concepts and definitions: ecology, landscape, habitat, ecozones, biosphere, ecosystems, ecosystem stability</li><li>– Autecology; synecology; major terrestrial biomes.</li><li>– Types of ecosystems: forest, grassland, lentic, lotic, estuarine, marine, desert, wetlands</li><li>– Ecosystem structure and function; abiotic and biotic components of ecosystem.</li><li>– Ecosystem connections: food chain, food web; detritus pathway of energy flow, The 10 Percent Energy Law by Lindeman, characteristics and decomposition processes; ecological efficiencies; ecological pyramids: pyramids of number, biomass, and energy.</li><li>– Exercise</li></ul>	20	40
Biodiversity	<ul style="list-style-type: none"><li>– Concept of Biodiversity</li><li>– Value of Biodiversity</li><li>– Types of Biodiversity</li><li>– Loss of Biodiversity</li><li>– Balance in Nature</li><li>– India as Mega diversity Nation</li><li>– Our Common Plants</li><li>– Our Common Animals</li><li>– Economic Potential</li><li>– Wildlife in Trade</li><li>– Strategies of Conservation</li><li>– Exercise</li></ul>	20	60

**Class XII**  
**SEMESTER – IV**  
**Course Code: ENVS**  
**Course Code: (Theory) ENVS**

Full Marks: 40

Contact Hours: 80

<b>Chapter</b>	<b>Subtopics</b>	<b>Marks</b>	<b>Hours</b>
Environmental pollution and pollution control	<ul style="list-style-type: none"> <li>– Air Pollution: Source, impact, control measures; Ozone Layer Depletion and its Effects Green House Effects and Global Warming; Ambient Air Quality Standards</li> <li>– Water Pollution: Source, impact, control measures; Water Quality Parameters and Standards</li> <li>– Soil Pollution: Source, impact, control measures; Soil quality indicators</li> <li>– Noise Pollution: Source, impact, control measures; Noise level parameters</li> <li>– Radiation Pollution</li> <li>– Carbon trading, Carbon footprint</li> <li>– Pollution-Related Diseases</li> <li>– Disaster – Natural &amp; Man-Made</li> <li>– Strategies for Pollution Abatement and Environmental Quality Improvement</li> <li>– Clean Development Mechanism (CDM)</li> <li>– Regulatory framework for pollution monitoring and control; case study: Ganga Action Plan; Yamuna Action Plan</li> <li>– Exercise</li> </ul>	20	45
Environmental law and management	<ul style="list-style-type: none"> <li>– Concept of Environmental Management: Need, Aspect, Approaches (Social, Economic and Moral)</li> <li>– Waste Management: Solid, Liquid, Biomedical and Hazardous</li> <li>– 4R Management</li> <li>– Legal Provisions for Environmental Management: The Indian Forest Act 1927; The Wildlife (Protection) Act 1972; The Water (Prevention and Control of Pollution) Act 1974; The Water (Prevention and Control of Pollution) Cess Act 1977; The Forests (Conservation) Act 1980; The Air (Prevention and Control of Pollution) Act 1981; The Environment (Protection) Act 1986;</li> </ul>	20	35

	Motor Vehicle Act 1988; The Public Liability Insurance Act 1991; Noise Pollution (Regulation and Control) Rules 2000; The Biological Diversity Act 2002 – Approaches for Environmental Management – Exercise		
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**Course Code: ENV5**

**Course Code: (Project) ENV5**

Full Marks: 20

Contact Hours: 20

<b>Chapter</b>	<b>Subtopics</b>	<b>Marks</b>	<b>Hours</b>
<b>Home Assignment</b>	<b>PROJECT II</b> – Rainwater Harvesting – Waste Management System in (Municipality/Panchayet) in your locality – Study of Biodiversity in your locality – Water/Air/ Noise Pollution in your locality	10	10
<b>Tutorial</b>		5	5
<b>Remedial</b>		5	5