

**CHOICE BASED CREDIT SYSTEM WITH OBE PATTERN  
FOR THOSE WHO HAVE JOINED FROM THE ACADEMIC YEAR  
2021 – 2022 ONWARDS  
ENVIRONMENTAL STUDIES**

<b>Sem</b>	<b>Subject</b>	<b>Teaching Hrs. Per Week</b>	<b>Cr.</b>	<b>Duration of Exam (Hrs)</b>	<b>Marks Allotted</b>		
					<b>Internal</b>	<b>External</b>	<b>Total</b>
<b>II</b>	Environmental Studies	1	1	2	–	100	100

**PART – IV Elective**

**ENVIRONMENTAL STUDIES  
SEMESTER II**

**Code: 214103201**

**1 Hr/Week  
Credit 1**

**PREAMBLE:**

- *The object of introducing environmental studies for all college going students right in the first year itself irrespective of whether they belong to arts or science discipline is that it is an endeavor very much essential. The subject being interdisciplinary in character should evoke interest in the minds of students of this age group.*
- *The aim is to make the students learn the concepts of ecosystems, food web, natural cycles like nitrogen, carbon, water, etc, operating in nature, biodiversity and to emphasize that it should not be disturbed at any cost by human greed that may result in unsustainable development. Even the present day fallout 'pollution' must definitely be controlled, contained and altogether eliminated as early as possible to save our world from further chaos and irreversible degradation. Precise knowledge of biology and ecology is needed to create an emotional bond with plants and animals and to foster appreciation for the environment.*

**UNIT – I:**

**[3 Hrs]**

**Environmental Resources:**

- a. Importance of Environmental studies
- b. Natural resources
  1. Non-renewable resources – coal, petroleum, associated problems.
  2. Renewable resources – Solar, Wind, Biogas, Fuel.
- c. Scope and limitations natural resources
- d. Conservation of natural resources
- e. Equitable use of resources for sustainable development.

**UNIT – II:**

**[3 Hrs]**

**Ecosystems:**

- a. Concept – understanding of ecosystems
- b. Degradation of ecosystems – prevention
- c. Structure and functions of an ecosystem: producers, consumers and decomposers
- d. Energy flow in the ecosystem
- e. Natural cycles like water cycle, carbon cycle, oxygen cycle, nitrogen cycle and energy cycle
- f. Integration of cycles in nature.

**UNIT – III:**

**[3 Hrs]**

**Ecological Succession:**

- a. Food chains, webs and ecological pyramids.
- b. Types of ecosystems: forest, grassland, desert and aquatic ecosystems.

UNIT – IV:

[3 Hrs]

Biodiversity and its Conservation:

- a. Introduction
- b. Genetic, species and ecosystem diversity
- c. Values of biodiversity
- d. India as a mega-diversity nation
- e. Biodiversity hotspots
- f. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts
- g. Endangered species and
- h. Conservation

UNIT – V:

[3 Hrs]

Environmental Pollution:

- a. Introduction and types of Pollution
- b. Air Pollution – causes, effects and control measures
- c. Water Pollution– causes, effects and control measures
- d. Soil Pollution– causes, effects and control measures
- e. Marine Pollution– causes, effects and control measures
- f. Noise Pollution– causes, effects and control measures
- g. Thermal and nuclear pollution
  - causes, effects and control measures
- h. Global warming
  - causes, effects and steps to be taken to minimise.

TEXT BOOK:

01. Padmanabhan A., and et al., Environmental Studies for Undergraduate Courses, Research Department of Yadava College, Madurai, 2008.

REFERENCES:

01. Erach Bharucha, Text book of Environmental studies for Undergraduate courses, Universities Press (India) Pvt. Ltd., 3 – 5 – 819, Hyderabad – 500 029.
02. Eugene P. Odum, Fundamentals of Ecology, Natraj Publications, Dehra dun.
03. Kaushik A and Kaushik C.P., Perspectives in Environmental Studies, New Age International Publishers, New Delhi – 110 002. Meerut – 250 002, ISBN 81 – 7133 – 157 – 2.
04. Sharma, Rastogi P.D., Ecology and Environment, Publications.
05. Thangamani and Shyamala Thangamani, A Text Book of Environmental Studies, Pranav Syndicate, Publication Division, Sivakasi.
06. பேராசிரியர். ஜே. தர்மராஜ், சுற்றுச் சூழல் இயல், டென்சி பப்ளிகேஷன்ஸ், சிவகாசி – 626 123.