

# बिरसा मुंडा द्रायबल युनिवर्सिटी Birsa Munda Tribal University

राजपिपला, जि॰ नर्मदा Rajpipla, Dist. Narmda Established by Tribal Development Department, Govt. of Gujarat

### **School of Science**

B.Sc. (Zoology) Programme

SUBJECT Code & Name: - BS04VAZOO1 ENVIRONMENTAL STUDIES

## **Teaching and Evaluation Scheme:**

Teaching Scheme				Examination Scheme  Component Weightage (%)			
L	T	P	Total	TH	PWE	TH	PWE
2	-	112	2	50	00	50	00

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Programme Name	B.Sc. (Zoology)
Semester	IV
Course Code	BS04VAZOO1
Course Title	Environmental Studies
Course Content Type (Th./Pr.)	Theory
Course Credit	2
Sessions+ Lab. Per Week	2
Total Teaching/Lab. Hours	30 Hours
* 2 Laboratory = 1 Session	

### Learning Objectives

- The primary objectives of environmental studies are to foster awareness, impart knowledge, cultivate concern, and encourage action towards environmental protection and sustainable resource use.
- 2. Aim to equip individuals with the knowledge, skills, and attitudes needed to understand and address environmental issues.
- 3. Understanding how ecosystem, climate, and natural resources function.
- 4. Applying the scientific method to investigate environmental issues

## Prerequisites (if any)

## Learning Outcomes

On the Completion of this course, students will able to:

Students will be able to:

1. Demonstrate mastery of core ecological and physical science concepts and methods as they pertain to environmental problem-solving.





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- 2. Demonstrate mastery of core social science concepts and methods as they pertain to environmental problem-solving.
- 3. Recognize and integrate the international, cross-cultural, and transdisciplinary nature of environmental problems in analyses and solutions.
- 4. Produce a culminating/multi-scale piece of work demonstrating the ability to synthesize concepts and methods to make a contribution to environmental solutions.
- 5. Apply proficiency in analytical methods, critical thinking, communication, and leadership skills sufficient to make a contribution in environmental and related fields.

	Contents	TEACHING	
UNIT	TOPIC/SUB-TOPIC	TEACHING HOURS	
Ι	<ul> <li>Components of Environment,</li> <li>Man-Environment relationship</li> <li>Impact of Technology on the environment</li> <li>Environmental Degradation</li> <li>Ecology &amp; Ecosystems</li> <li>Components of ecosystem- Producers, Consumers and Decomposers</li> <li>Bio-Geo- Chemical Cycles, Hydrological Cycle, Carbon Cycle Oxygen Cycle, Nitrogen Cycle and Sulfur Cycle</li> <li>Energy Flow in Ecosystem</li> <li>Food Chains: Grazing, Detritus, &amp; Food webs</li> <li>Ecological Pyramids</li> <li>Major Ecosystems: Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem, Aquatic Ecosystem, Estuarine Ecosystem.</li> </ul>	15	
II	<ul> <li>Natural Resources and pollution</li> <li>Renewable Resources     <ul> <li>Solar energy, Wind energy and Biomass</li> </ul> </li> <li>Non-renewable Resources     <ul> <li>Fossil fuel</li> <li>Minerals</li> </ul> </li> </ul>	15	



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- Pollution:
  - Air pollution
  - Water pollution
  - Soil pollution
  - Noise pollution
  - Thermal pollution
- Current Environmental Global Issues:
  - Global Warming & Green Houses Effects,
  - Acid Rain,
  - Depletion of Ozone Layer

### Reference Books

- 1. Pathfinder's Fundamentals of Ecology and Environment.
- 2. Environmental Studies: R. Rajagopalan, Oxford University Press
- 3. Environmental Pollution: Causes, Effects & Control by K.C Agrawal
- 4. Environmental Science by Richard T Wright & Bernard J Nebel
- 5. Environmental Science by Daniel B Botkin& Edward A Keller
- 6. Environmental Engineering & Management by Suresh K Dameja

#### Web Resources

### Required Software(s) (if any)

L:: Lecture, T:: Tutorial, P:: Practical

CCE:: Continuous and Comprehensive Evaluation

(CCE Theory includes Mid Semester Examination, Assignment, MCQ quizzes, Seminar, Reflective notes, class participation, case analysis and presentation, slip tests (announced/surprised), attendance etc. or any combination of these)

PWE:: Practical Work Examination

(PWE includes Laboratory practical work, project work, viva simulation exercise work etc.)

SEE:: Semester End Evaluation

