



बिरसा मुंडा ट्रायबल युनिवर्सिटी

Birsa Munda Tribal University

राजपिपला, जि. नर्मदा Rajpipla, Dist. Narmada

Established by Tribal Development Department, Govt. of Gujarat

School of Science

B.Sc. (Chemistry) Programme

Subject Code & Name: - BS01MDCHE1: Ecosystem and Natural Resources

Teaching and Evaluation Scheme:

Teaching Scheme				Examination Scheme			
Credits				Component Weightage			
				CCE		SEE	
L	T	P	Total	TH	PWE	TH	PWE
3	-	1	4	37.5%	12.5%	37.5%	12.5%

Programme Name	B.Sc. (Chemistry)
Semester	I
Course Code	BS01MDCHE1
Course Title	Ecosystem and Natural Resources
Course Content Type (Th./Pr.)	Theory
Course Credit	3+1
Sessions+ Lab. Per Week	3+2
Total Teaching/Lab. Hours	45 Theory Hours + 30 Practical Hours
* 2 Laboratory = 1 Session	

Learning Objectives

1. This is a unique undergraduate course designed to provide students with a fundamental understanding of ecological principles as applied to current natural resources and its management. This course arms students with the essential knowledge to tackle natural resources challenges in a changing world.

Prerequisites (if any)

Learning Outcomes

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

1. To understand the basic concepts of environmental studies and natural resources.
2. To learn about the various eco-systems of nature.
3. To gain knowledge about different types of environmental pollutions and their control measures.
4. To acquire the knowledge about the various social aspects related to the environment.





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Detailed Contents		
UNIT	TOPIC/SUB-TOPIC	TEACHING HOURS
I	Fundamentals Ecosystems: <ul style="list-style-type: none">• Introduction• Concept and types of ecosystem,• Structure and functioning of an Ecosystem.• Food chains, food webs and ecological pyramids• Energy flow in an ecosystem through Food Chain.• Primary Production and Secondary Production.• Ecosystem Regulation• Ecological Succession• Major Components of Ecosystems and Balance in Nature.• Terrestrial Ecosystems: Forests, Grasslands and Deserts.• Aquatic Ecosystem: Fresh Water, Coastal Water and Marine Water.	15
II	Natural Resources: <ul style="list-style-type: none">• Introduction.• Forest Resources (Narmada District).• Water Resources.• Energy Resources.• Land Resources.• Role of an Individual in Conservation of Natural Resources.• Equitable Use of Resources for Sustainable Lifestyles.• Environmental Implications of Non-conventional Sources of Energy.• Role of Government In conservation of natural Resources.	15





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III	Environmental Pollution: <ul style="list-style-type: none">• Introduction• Air Pollution, Sources of Air Pollution and Air Pollutants, Methods to Control Air Pollution.• Acid Rain.• Smog: Sulphur, Photochemical and Industrial.• Ozone layer depletion.• Water Pollution.• Soil Pollution and Soil Conservation.• Noise Pollution.• Thermal Pollution.• Marine Pollution.• Nuclear Hazards.• Solid Waste Management.	15
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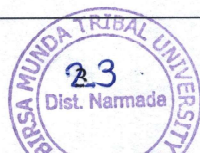
Unit – IV Practical(s)

30 Hours

1. To study the detritus and grazing food chain.
2. To study bottom-up and top-down control of community structure in through food web.
3. To study energy, numbers and biomass ecological pyramids.
4. To study the ecological succession and their types with examples.
5. To study types of terrestrial ecosystem.
6. To study types of aquatic ecosystem.
7. To study the forest resources in context of Indian forests.
8. To study hazardous pollutant in water and their adverse effects on health.
9. To study the sewage treatment plants its mechanism.
10. To study the eutrophic conditions in water bodies.

Text Book(s)

1. Environmental Studies by Benny Joseph Tata McGraw Hill Publishing Co. Ltd.
2. Textbook of Environmental Studies for Undergraduate Courses by Erach Bharucha Hyderabad, Universities Press





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Reference Books

1. Textbook of Environmental Sciences and Technology by Anji Reddy, Hyderabad.
2. Introduction to Environmental Sciences by Y. Anjaneyulu, BS Publications.
3. Fundamentals of Ecology by Odum E.P., Saunders, Philadelphia.
4. Ecology and Ecosystem Conservation by Schmitz O. J., Island Press, Washington, DC

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

