

Veer Narmad South Gujarat University
Environmental and Ecological Management
First Year BBA (Semester-2) With Effect from AY2023-24

Course	MDC
Course Title	<u>Environmental Science</u>
Credit	4
Teaching per Week	4 Hours
Review / Revision	Oct, 2023
Minimum weeks / Semester	16 (Lectures, Guest Lectures, Case Study, Presentations, Group Assignments)
Medium of Instruction	English
Purpose of Course	To create awareness about environment and environmental issues
Course Objective	<ul style="list-style-type: none"> To expose students How science and the scientific method address environment systems and issues and how natural systems function, and how they are affected by human activity.
Course Outcome	<p>The students will be able to</p> <ul style="list-style-type: none"> Understand various kinds of renewable and Non renewable resources Understand role of an individual in prevention of pollution and pollution related issues. Define the principles of science, and sustainability, and recognize their role in evaluating and establishing a viable human society within Earth's systems Describe ecosystems in terms of how they vary, are structured, and function both internally and as part of the larger biosphere. Reflect critically about their roles and identities as citizens, consumers and environmental f actors in a complex, interconnected world.
Course Content	
Unit 1: Multidisciplinary Nature of Environmental Studies (15%) Definition, scope and importance, Need for public awareness - Institutions in Environment, People in Environment.	
Unit 2: Natural Resources: Renewable and non-renewable resources: (25%) Natural resources and associated problems, Non-renewable Resources, Renewable Resources - A) Forest resources B) Water resources, C) Mineral resources, D) Food resources, E) Energy resources F) Land resources, Role of an individual in conservation of natural resources	
Unit 3: Ecosystems (30%) Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem-1.The water cycle, 2.The Carbon cycle, 3.The Oxygen cycle, 4, The Nitrogen cycle, 5.The energy cycle, 6.Integration of cycles in nature, Ecological succession, Food chains.	

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Unit 4: Environmental Pollution and social Issues**(30%)**

1. Definition, Causes, effects and control measures of - Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards,
2. Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
3. Role of an individual in prevention of pollution, Pollution case studies.
4. **Disaster management:** floods, earthquake, cyclone and landslides. From Unsustainable to Sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, water shed management

Suggested Readings:**Text Book**

- Textbook of Environmental Studies for Undergraduate Courses by Erach Bharucha (Universities Press)

Reference:

- D.K.Asthana, Meera Asthana, Environmental Studies, S Chand & Company, New Delhi.

Further Readings

1. Agarwal KC, 2001. Environmental Biology, Nidi Publishers Ltd.Bikaner.
2. Bharucha Erach, 2003. The Biodiversity of India, Map in Publishing Pvt.Ltd, Ahmedabad-380013, India. Email: mapin@icenet.net
3. Brunner RC, 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480pgs.
4. Clark RS, Marine Pollution, Clanderson Press, Oxofrd(TB).
5. Cunningham WP, Cooper TH, Gorhani E & Hepworth MT, 2001. Environmental Encyclopaedia, Jaico Publishing House, Mumbai, 1196pgs.
6. De AK, Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Center for Science and Environment(R)
8. Gleick HP, 1993. Water in Crisis, Pacific Institute for Studies in Development, Environment and Security. Stockholm Environmental Institute, Oxford University Press, 473pgs.
9. Hawkins RE, Encyclopaedia of Indian Natural History, Bombay Natural History Society, Bombay(R)
10. Heywood VH, and Watson RT, 1995. Global Biodiversity Assessment. Cambridge University Press 1140pgs.
11. Jadhav Hand Bhosale VM, 1995. Environmental Protection and Laws. Himalaya Publishing House, Delhi 284pgs.
12. McKinney ML and Schoch RM, 1996. Environmental Science Systems and Solutions. Web enhanced edition, 639pgs.
13. Mhaskar AK, Matter Hazardous, Techno-Science Publications(TB)
14. Miller TG, Jr. Environmental Science, Wadsworth Publishing CO.(TB)
15. Odum EP, 1971. Fundamentals of Ecology. WB Saunders Co. USA, 574pgs.
16. Rao MN and Datta AK, 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd. 345pg