

SARDAR PATEL UNIVERSITY
Programme: MSC (Botany)
Semester: III
Syllabus with effect from: June 2011

Paper Code: PS03CBOT03	Total Credits: 4
Title Of Paper: Environmental & Ecological principles	

Unit	Description in detail	Weightage (%)
1	Environment and Ecology: Concept of Biosphere, its components, development and functioning, Ecological considerations; population growth; Limiting factors and their operation; Ecological balances and survival thresholds; Need for preservation of environmental quality.	
2	Ecosystems and their functioning: Structural and functional attributes of Ecosystem; Biogeochemical cycles; Natural succession; Dynamic equilibrium and factors contributing to it; Major Ecosystems on Earth; Habitat and Niche; Diversity and stability in the ecosystem.	
3	Impact of human activities on Environment: Over exploitation of natural resources including biological resources; indiscriminate agriculture; big dams; mining; urbanization and industrialization.	
4	Environmental Pollution and Treatment: Atmospheric pollution; water pollution; land degradation; Pollution and Environmental Health.	
5	Fossil fuels and the Environment: Conservation of Non Renewable Energy Resources and Alternative energy resources and Environment.	
6	Environmental Impact Assessment and Management : Concept of Environmental inventory and impact assessment, key steps in EA process with reference to big dams/ chemical industries/ power plants/mining; methods for forecasting, assessing and preparing environmental impact statement, reviewing and evaluating EIA report; Environmental Audit: Programme planning, on-site audit, post-audit activities, Restoration of ecosystem.	
7	Environmental Laws: Air quality and emission standards; Air pollution legislation and regulations; Functions of the central Board and the state Boards; Environmental law in independent India.	
8	Environmental Education: Meaning, scope and principles of environmental education; Role of environmental education in bringing awareness among the public in problem solving and management; formal and informal environmental education; Role of various kinds of mass media in environmental education. Biological diversity concepts and levels, role of biodiversity in ecosystem functions and stability, speciation and extinction, local categories of threat, terrestrial biodiversity hot-spots	

Basic Text & Reference Books:

- Trivedi, P. R. and Singh, U. K. Global environmental Education
- Botkin, D. B. and Keller, E. A. Environmental Science: Earth as a living Planet
- Kaufman, D. G. and Fraz, C. M. Biosphere 2000: Protecting our Global Environment Chary, EP Fundamentals of Ecology



- The State of India's Environment: The second citizen's Report Centre for Science and Environment
- B. C. Rana. Biomonitoring
- Botkin, E. B. et al. Changing the Global Environment: Perspectives on Human Involvement Saxena, A. B. Environmental Education
- Khoshoo, T. N. Environmental priorities in India and sustainable development
- Mansfield: Effect of Air pollution on plants Masson, C. J. Biology of pollution

