

1153CE107 (VTUR15)	ENVIRONMENTAL CONSERVATION	L	T	P	C
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COURSE CATEGORY: Allied Elective

A. PREAMBLE :

To provide a basic understanding of occupancy of the ecosystem in line with Biodiversity. Its conservative measures taken by the agencies as well as the federal Governments.

B. PRE-REQUISITES:

- NIL

C. COURSE EDUCATIONAL OBJECTIVES:

Students undergoing this course are expected to:

- Understand the basics of ecosystems and Biodiversity
- Understand and visualize the conservative measures as well as sustainable development strategies laid by the federal agencies and Government bodies

D. COURSE OUTCOMES:

Upon the successful completion of the course, learners will be able to

CO	STATEMENT	K LEVEL
CO1	Illustrate the elements and types of biodiversity.	K2
CO2	Contrast the threats and damages to biodiversity.	K2
CO3	Classify the bio diversity conservation and protection measures.	K2
CO4	Outline the sustainable management of bio diversity.	K2
CO5	Summarize the legal aspects for environmental conservation.	K2

E. CORRELATION OF COS WITH POS:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						M						
CO2						M	M					
CO3						M	M					
CO4						M	M					
CO5							M					

F. COURSE CONTENT:

UNIT I TYPES, FUNCTIONS AND BENEFITS OF BIODIVERSITY 9

Types of Biodiversity: Species, Genetic and Ecosystem diversity – Alpha, beta, and gamma diversity – Biodiversity and ecosystem function – Megadiversity zones and Biodiversity Hot Spots in India – Ecologically Sensitive Areas (ESA) in India - Use of Biodiversity: Source of food, medicine, raw material, aesthetic and cultural uses – Biodiversity Prospecting: Significance of Indigenous Knowledge Systems

UNIT II THREATS TO BIODIVERSITY 9

Natural and anthropogenic threats to biodiversity – Human-Animal conflict with special reference to elephants and tigers - IUCN Threat Categories – Red Data Book – Wildlife exploitation - Species extinctions – Endangered and endemic species of flora and fauna in India - Over-harvesting and Climate change on biodiversity - Causes and Impacts of Invasive species to biodiversity

UNIT III CONSERVATION STRATEGIES 9

Current practices in conservation: Habitat or Ecosystem Approaches - Species-based Approaches - Social Approaches: Chipko Movement – In-situ conservation: Afforestation, Social Forestry, Agroforestry, Botanical gardens, Zoos, Biosphere Reserves, National Parks, Sanctuaries, Protected Area Network, Sacred Groves and Sthalavrikshas – Ex-situ conservation: Cryopreservation, Gene Banks, Seed Banks, Pollen Banks, Sperm Banks, DNA Banks, Tissue Culture and Biotechnological Strategies

UNIT IV SUSTAINABLE MANAGEMENT OF BIO RESOURCES

9

National Biodiversity Authority (NBA) – Functions of State Biodiversity Board (SBB) and Biodiversity Management Committee's (BMC) – The role of WWF, FAO, UNESCO, UNDP and UNEP for biodiversity conservation – An elementary account on WTO, GAAT and TRIPS – Biopiracy rights of farmers, breeders and indigenous people –Biodiversity informatics with special reference to plant genetic resources

UNIT V POLICIES, PROGRAMMES AND ACTS FOR CONSERVATION 9

Status and protection of species in National and International levels – Role of CITES and IUCN – Convention on Biological Diversity (CBD) – Nagoya Protocol – Man and Biosphere Programme (MAB) – Policies implemented by MoEF for biodiversity conservation – Salient features of Biological Diversity Act 2002.

TOTAL: 45 Periods

G. LEARNING RESOURCES:

a) TEXTBOOKS

1. Chaudhuri AB and Sarkar DD (2003) Megadiversity Conservation, Flora, Fauna and Medicinal Plants of India's Hot Spots. Daya Publishing House, New Delhi.
2. Dadhich LK and Sharma AP (2002) Biodiversity –Strategies for Conservation, APH Publishing Corporation, New Delhi.
3. Gary K Meffe and Ronald Carroll C (1994) Principles of Conservation Biology. Sinauer Associates Inc., Massachusetts.
4. Groombridge B (Ed.) (1992) Global Biodiversity Status of the Earths Living Resources. Chapman & Hall, London.
5. IUCN (1992) Global Biodiversity and Strategy. 6. Khan TI and Dhari N Al Ajmi (1999) Global Biodiversity – Conservation Measure, Pointer Publishers, Jaipur.