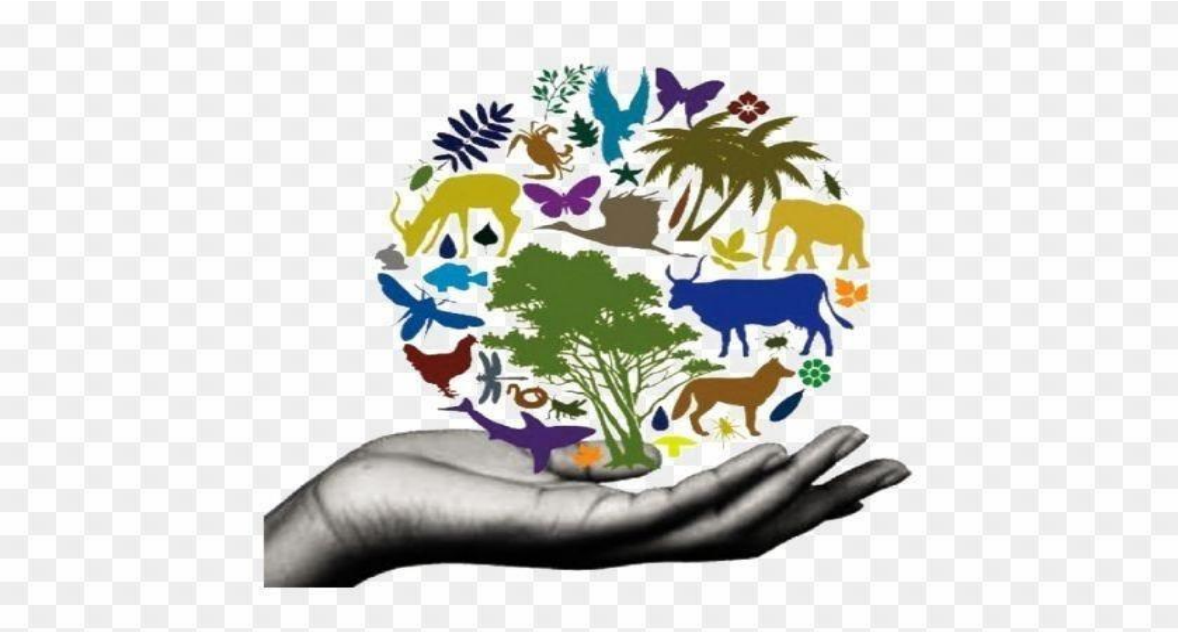
DINABANDHU ANDREWSCOLLEGE



COURSE TITLE

BIODIVERSITY AND CONSERVATION: An Holistic Concept and Beyond

Offered by

Department of Zoology
Dinabandhu Andrews College
GARIA
KOLKATA- 84

Sutapa Gupta

Head
Department of Zoology
Dinabandhu Andrews College
Garia, Kolkata-84

BIODIVERSITY AND CONSERVATION: An Holistic Concept and Beyond

INTRODUCTION

Biodiversity refers to the variety of life on earth, including all the speciesof plants, animals, fungi and microorganisms as well as the ecological processes that sustain them. Biodiversity is crucial for maintaining the health and stability of ecosystems, providing a wide range of ecosystem services. Unfortunately, anthropogenic activities are causing rapid decline in biodiversity, with many species facing extinction. Protecting and restoring Biodiversity is essential for ensuring long term sustainability of our planet and wellbeing of all its inhabitants.

COURSE OUTCOME

To provide a holistic knowledge on Biodiversity and Conservation coveringboth basic and contemporary concepts.

DURATION

4 Weeks [30 hours (6hrs per week x 5weeks)]

One class (Theory): 1Hour

Final Assessment on the Last day of the course

Course Fee**:** Free of Cost

COURSE COORDINATOR: Dr. Sutapa Gupta

JOINT COORDINATOR: Ms. Ruksa Nur

MODE OF TEACHING: Online

FACULTY MEMBERS: All Faculty members of Zoology Department

TARGET STUDENTS: Undergraduate Students

COURSE CONTENT:

Module	Chapters	Content	Hours
Module 1	Overview of Biome and Habitat Ecology	Types of Biomes and habitats Habitat ecology with emphasis on Forests and Wetlands (features, distribution, threats and conservation measures)	**2**
Module 2	Biodiversity conservation to sustainable development	Basics of Biodiversity conservation Mechanisms of conservation Conservation practice Law and community enforcement for biodiversityconservation Traditional knowledge &	3

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		practices for the sake of Conservation Role of research & technology for biodiversity conservation Technological and management considerations forconservation Sustainable development	
Module 3	Reasons behind loss of biodiversity	Overexploitation of resources Introduction of invasive species Pollution: Air, Water, Soil Types of Habitat change Genetic Consequences of fragmented Population: a. Loss of Genetic Variation with special reference to Genetic Drift b. Inbreeding Depression c. Outbreeding Depression d. Loss of Evolutionary Flexibility e. Unequal Sex Ratio Species loss and system degradation Climate mediated mechanism of ecosystem change Creating climate integrated conservation strategiesThe global fingerprint of climate change	**3**
Module 4	Concept of rescueeffect to mitigate effect of habitat fragmentation	Concept of Corridors Types of Corridors Rescue Effect Structural and Functional Connectivity Wildlife Corridors of India Advantages and disadvantages of Corridors	**2**
Module 5	Biosphere Reserve	1. Concept of Biosphere Reserve 2. Theory of Island Biogeography and strategy of Reserve Design 3. Zones of Biosphere Reserve 4. Biosphere Reserve in India 5. Joint Forest Management	**3**

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Module 6	Basic concept ofWildlife Biology	Conservation: Indian Perspective Conservation of Olive Ridley Turtle, Fishing Cat, One horned Rhino, Gangetic River Dolphin, Himalayan Musk deer, Great Indian Bustard	**3**
Module 7	India as a Mega biodiversity country	Flora and fauna in India. Mega diversity hotspots in India India's Geography and Biodiversity Threats to India's biodiversity Conservation of India's BiodiversityProtected areas. Conservation programme and initiativesProject Tiger. Project Elephant. Green India Mission	**3**
Module 8	Theories of Landscape ecology	**Landscape ecology:** Principles and foundation. Historical perspective. Terminology and concepts Themes of study and application **Theories:** Theories and implications of landscape concept.	**5**
Module 9	Wildlife forensics& conservation	Basic concepts and definition Concept of molecular genetic markersApplication of forensic concept	**3**
Module 10	Wild life conservation during Corona Virus pandemic period	Impacts of the Coronavirus pandemic on biodiversity conservation Mixed species conservation strategies Effect of COVID 19 in mixed species habitat	**3**

LEARNING RESOURCES

SL. NO.	TITLE OF THE BOOK	AUTHOR(S)	PUBLISHER
1	Fundamentals of Ecology	Eugene Pleasants Odum (E P Odum)	5th Edition Thomson Brooks
2	Biodiversity Conservation and Sustainable Development	Ganesh Prasad	Anmol Publications Pvt. Ltd
3	The root causes of biodiversity loss	Alexander Wood, Pamela Stedman-Edwards	Johanna Mang Tailor & Francis Group

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4	Wildlife Biology : An Indian Perspective	Goutam Kumar Saha, Subhendu Mazumdar	PHI Learning Pvt. Ltd.
5	Biodiversity Perception, Peril & Preservation	Prabodh K Maiti, Poulami Maiti	PHI Learning Pvt. Ltd.
6	COVID 19, others zoonotic diseases and wildlife conservation	Carlos Santana	Hist Philos Life Sci (2020)
7	Virus diversity, Wildlife- Domestic Animal Circulation and potential Zoonotic Viruses of small Mammals Pangolins and Zoo Animals	Xinyuan Cui *et. al*	Nat Commun (2023)
8	Transmission Dynamics and susceptibility patterns of SARS cov-2 in domestic, farmed and wild animals: sustainable one health surveillance for conservation and public health to prevent future epidemics and pandemics	Ariful Islam *et. al*	Transbound Emerg Dis (2022)

EVALUATION POLICY FOR THE ADD-ON COURSE

The students were evaluated on the basis of Multiple choice based questions at the end of this 30hours Add-on course. The questions were framed to gauge whether they were able to comprehend the concepts.

Total marks of the Evaluation process would be–50 Marks (Based on MCQs)

TABLE FOR QUALIFICATION

TOTAL SCORE (OUTOF50)	GRADE
45 – 50	O – OUTSTANDING
40 – 44	E – EXCELLENT
35 – 39	A– VERYGOOD
30 – 34	B – GOOD
25-29	C-FAIR
BELOW 25	F-FAILED

GENERAL RULES AND REGULATIONS

1. Students must attend and appear for all the Modules- Student would be assessed on the last day of the course. If any student is absent on the day of the assessment, they will not be eligible for obtaining the certificate.

2. Total Marks of Course Evaluation will be 50 Marks.

3. Minimum 50% Marks has to be scored to receive any Certificate. There will be only ONE Attempt allowed for the Module-End Assessments and the Course-End Assessment.

4. There will be NO PROVISION for Backlog Clearance.

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5. General Rules and Regulations of the College must be followed without any exception.

6. **Minimum 75% attendance is required to receive the certificate of the course.**

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