



Faculty: Science

Program: Open Elective for S.Y.B.A./S.Y.BCOM

Subject: Insights into Field Biology

Academic Year: 2024 – 2025

Open Elective under Choice Based Credit System (CBCS)

Approved by the Board of Studies in Zoology

Effective from Academic year: 2024-25

Under the aegis of National Education Policy (NEP)

Preamble

“Where the mind is without fear and the head is held high”

A poem written by Nobel Laureate Rabindranath Tagore (Nobel Prize in Literature in 1913), the poem represents Tagore’s vision of a new and awakened India (it is quoted in this preamble in the context of National Education Policy).

Our institution was one of the lead colleges, affiliated to University of Mumbai in implementing India’s National Education Policy 2020 (NEP 2020) in academic year 2023-24. Moreover, we were also conferred with ‘Empowered Autonomous Status’ in 2023-24, which becomes all the more relevant, in terms of our contribution as an educational institution to fulfill the visionary and transformative objectives of National Education Policy. Under the aegis of academic autonomy, the Department of Zoology has the privilege of ‘academic freedom’ to revise its course and curriculum, however, it is also aware of the fact that ‘academic freedom’ needs to be justified with ‘academic excellence’.

Incidentally, under the aegis of National Education Policy, the undergraduate students have to choose an Open Elective or Generic Elective whereby, it is will be an elective course generally chosen from an unrelated subject / discipline with the intention to seek multidisciplinary exposure. In this context, the Department of Zoology has offered to the students from faculty of arts and commerce (SYBA/SYBCom students) an Open Elective titled ‘Insights into Field Biology’.

The rationale behind designing the curriculum of ‘Insights into Field Biology’ is as follows:

- ✓ *Background - Study of wildlife and environment is driven by the curiosity and sense of attachment with the nature. Since due to anthropogenic activity there is rapid decline in species diversity and habitat, the rationale behind offering this course as an Open Elective for students from faculty of arts and commerce is to inculcate the importance of field visits so that students can see appreciate the flora and fauna, besides creating awareness about the rich biodiversity in different habitats in and around the city of Mumbai.*
- ✓ *Aims/Objectives - This Open Elective Course will help students in understanding the local biodiversity and importance of conserving organism and its environment. It will create awareness about the relevance of Field Biology as one of the important tools in studying flora/fauna and its conservation.*
- ✓ *Expected Outcome: This Course will sensitize and create awareness amongst students about conservation of nature and natural resources. Moreover, it may become relevant in changing the perspectives of society and mankind in addressing issues relevant to conservation and management.*

The modules incorporated in this Open Elective is a collective and constructive effort of the faculty, experts from research institutions, alumni and board members whose valuable suggestions were instrumental in materializing this course. The recommendations of contributors and reviewers have been carefully considered and incorporated wherever feasible.

For effective teaching-learning, teachers are advised not to follow the syllabus too rigidly, but to exercise their professional discretion and judgment in implementing it. After all teaching is also about creating a conducive environment for learners to sustain enthusiasm about the subject.

Dr. Satish Sarfare

Chairman

Board of Studies in the subject of Zoology

SIES College of Arts, Science and Commerce (Empowered Autonomous)

Sion (West), Mumbai

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Members of the Board of Studies in the subject of Zoology and Syllabus Committee

- ✓ *Professor (Dr.) Manisha Kulkarni – Department of Zoology, Institute of Science, Fort, Mumbai (Vice Chancellor's Nominee)*
- ✓ *Professor (Dr.) Manoj Mahimkar – Principal Investigator, Cancer Research Institute, ACTREC, Kharghar, Navi Mumbai; (Subject expert from outside the Parent University to be nominated by the Academic Council)*
- ✓ *Dr. Sasikumar Menon – Director, Institute for Advanced Training & Research in Interdisciplinary Sciences (IATRIS), (Therapeutic Drug Monitoring Lab), Sion, Mumbai; Faculty, Pharma Analytical Sciences, Ruia College, Mumbai (Subject Expert from outside college/Industry Expert)*
- ✓ *Mr. Kedar Gore – Director, The Corbett Foundation (Non-profit Organization), Mumbai, (Subject expert from outside college / Representative from Corporate sector / Allied area)*
- ✓ *Ms. Uma Bandekar – Clinical Team Manager with ICON plc (Postgraduate Meritorious Alumnus)*
- ✓ *Mr. Pushparaj Shetty – Faculty, Department of Zoology, SIES College, Mumbai*
- ✓ *Dr. Rupali Vaity – Faculty, Department of Zoology, SIES College, Mumbai*
- ✓ *Dr. Madhavan Gopalan – Faculty, Department of Zoology, SIES College, Mumbai*
- ✓ *Dr. Aditya Akerkar – Faculty, Department of Zoology, SIES College, Mumbai*
- ✓ *Ms. Shraddha Patil – Faculty, Department of Zoology, SIES College, Mumbai*

**SIES COLLEGE OF ARTS, SCIENCE AND COMMERCE
(EMPOWERED AUTONOMOUS), SION (WEST), MUMBAI – 400 022**

**Department of Zoology
Open Elective for SYBA / SYBCom (2024-25)**

Semester - III

Title of the course: Insights into Field Biology- Tools and techniques

Department: Zoology; **Modules:** Lectures and Field visits

Credits: 2

Hours: 30

Topics	Learning Hours (1 lecture/hour)
Understanding the Field Various habitats and ecosystems Components of Ecosystem Food web and Food chain, Animal Interactions, Rules of the Field [Do's and Don'ts]	4
Types of habitats Aquatic habitat Marine habitat: Zonation of the Sea Freshwater habitat Brackish water habitat Terrestrial Habitat - Types of Terrestrial habitats	5
Tools for Field studies- Tools of the Field – Gadgets like Binoculars, Monocular, Camera, Uses of Field guides, Field Kit, Camera traps, light traps	4
Analysis of Field data Field Data Collection Techniques Field data Analysis Techniques- Sampling Methods, Data entry techniques	5
Field Visit/s (Minimum two) Visits to Veermata Jijabai Bhosale Udyan (Byculla Zoo), Sanjay Gandhi National Park, Marine Walk of Mumbai, Coastal Marine Biodiversity Centre, Chhatrapati Shivaji Maharaj Vaastu Sanghralalay	12

Semester - IV

Title of the course: Insights into Field Biology- Tools and techniques

Department: Zoology; **Modules:** Lectures and Field visits

Credits: 2

Hours: 30

Topics	Learning Hours (1 lecture/hour)
Introduction to Biodiversity Concept of biodiversity Types of Biodiversity Benefits of biodiversity Biodiversity hotspots Human activities affecting biodiversity	4
Urban ecology Characteristics of urban ecology Factors influencing urban ecology	4
Human wildlife Interaction Conflicts over resources Human wildlife interaction in natural and urban environment Strategies for coexisting	4
Wildlife protection act	3
Animal behaviour studies	3
Field visit (Minimum two) Visits to Veermata Jijabai Bhosale Udyan (Byculla Zoo), Sanjay Gandhi National Park, Marine Walk of Mumbai, Coastal Marine Biodiversity Centre, Bombay Natural History Society (BNHS), Chhatrapati Shivaji Maharaj Vaastu Sanghralalay	12

Learning Resources/References:

- Odum, E. P., & Barrett, G. W. (2005). *Fundamentals of Ecology*. 5th ed. Belmont, CA: Thomson Brooks/Cole.
- Ali, Salim and Laeeq Futehally. 1967. *Common Birds*. 1st ed. New Delhi: National Book Trust. Hbk
- Isaac David Kehimkar. 2008. *The Book of Indian Butterflies*, Bombay Natural History Society; Tata Social Welfare Trust.
- Deepak Apte. 2014. *Seashells of India*, New Delhi: Oxford University Press
- Decker, D. J., Lauber, T. B., & Siemer, W. F. (2002). *Human-wildlife conflict management*.
- Manral, Upma, et al. "Human wildlife conflict in India: a review of economic implication of loss and preventive measures." *Indian Forester* 142.10 (2016): 928-940.
- Gaston, Kevin J., ed. *Urban ecology*. Oxford University Press, 2010.
- World Encyclopedia of Animals; Elena Marcon & Manuel Mongini; 1991; Black Cat Imprint
- <https://www.indiacode.nic.in/bitstream/123456789/1726/1/a1972-53.pdf>

Additional Resources

BBC series

- Planet Earth Series 2006, 2016, 2023
- Blue Planet 2001
- Seven worlds, one earth 2019

Assessment / Evaluation pattern

Weightage for Internal	Minimum marks required	Pattern of Evaluation
50 Marks	20	20 marks - class test (No retest) + 30 marks- Assignment / Project / Practical exam*

* 30 Marks assessment may be done based on Field visit, and report, poster, artwork, poetry composed, photograph portfolio etc. submitted thereof, and submission of observational studies report wherever applicable.
