

UNIVERSITY OF NORTH BENGAL

Ph.D. Course Work Syllabus in ZOOLOGY
(To be implemented from Session 2023-2024)

University of North Bengal

Ph. D. Course Work Syllabus in Zoology 2023-2024 (CBCS)

Duration: 1 (One) Semester						
Paper	Course No.	Course Name	Credit	Marks		Hrs/Week
				End Term Exam	Pass	
Paper –I: Research Methodology	Course - 1	Review of Published Research in Animal Sciences	2	50	27.50	
	Course - 2	Ethics in Animal Research	1	25	13.75	
	Course - 3	Data processing and Computer Applications in Animal Research	1	25	13.75	
Paper II: Advanced course in Zoology	Course - 4	Advanced Course in Zoology	4	100	55.00	
Paper III: Research and Publication Ethics	Course - 5	Research and Publication Ethics	2	50	27.50	

Detailed Syllabus

Course – 1: Review of published Research in Animal Sciences.

Course – 2: Ethics in Animal Research: Sampling and collection, Animal and Human Ethical Committee and Ethics for Animal Handling, Biohazards and Biosafety, Intellectual Property Right (IPR), Breeder’s Right, Ethics and Regulation on germplasm exchange mechanism, Ethical issues of GM crops and Environmental Concerns of Transgenic Animals.

Course -3: Data processing and Computer applications in Animal Research: Determination of critical difference, correlation coefficient matrix and regression analysis through SPSS/Relevant Statistical Softwares; Awareness about other statistical software; Basic concepts of computer application-Word, office, Excel, Publisher, Linux; Bioinformatics database and softwares.

Course - 4: Advanced Course in Zoology

FM=100

1. Principles and applications of UV-VIS spectrophotometry, IR, NMR, Mass Spectroscopy.
2. Principles and applications of Paper, Thin-layer and Column Chromatography.
3. Electrophoresis: PAGE, SDS-PAGE, IEF, 2-D, Proteomics, Immuno-electrophoresis and Immuno-diffusion
4. Microscopy: Principles and applications of light, Phase-contrast, Confocal, Electron and Fluorescent microscopy.
5. Immunological techniques: ELISA, Western Blot, Dot Blot, Immuno-flourescence and Immuno-cytochemistry.
6. Nomenclature: Classification of name; Conservation strategies of Hotspots, Ramsar sites and Megadiversity countries.
7. Basic principles of PCR and other molecular techniques- RAPD, AFLP, RFLP, ISSR, SSR.

Course 5: RPE Syllabus as laid down by UGC