

UNIVERSITY OF NORTH BENGAL

Ph.D. Course Work Syllabus in ZOOLOGY

(To be implemented from Session 2020-2021)

University of North Bengal

Ph. D. Course Work Syllabus in Zoology 2020-2021 (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 | 2 | 50 | 27.50 | |
| | Course - 2 | Research Ethics | 1 | 25 | 13.75 | |
| | Course - 3 | Biometry, IPR, Bioinformatics, Computer applications and data processing | 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

Course – 2: Research Ethics: Plagiarism, 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: Biometry, Bioinformatics, Computer applications and data processing
Determination of critical difference, correlation coefficient matrix and regression analysis through SPSS software; 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, Electron and Fluorescent microscopy.
5. Immunological techniques: ELISA, Western Blot, Dot Blot, Immuno-flourescence and Immuno-cytochemistry.
6. Nomenclature: Classification of name; Typification and priority concept, Documentation; 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