

**UNIVERSITY OF NORTH BENGAL**

**M.Sc. SYLLABUS IN ZOOLOGY  
Choice Based Credit System  
(Implemented from Session 2022-23)**

**Detail Syllabus**

**2022**

## PG Syllabus in Zoology

### FIRST SEMESTER:

Course Type	Course Code		Marks (Theoretical + Class Test)	Credit
CORE (THEORY and PRACTICAL)	CC-101	Functional Biology of Non-chordates	42+8=50	02
	CC-102	Functional Biology of Chordates	42+8=50	02
	CC-103	Insect Biology & Pest Management	42+8=50	02
	CC-104	Ecological Principles and Applications	42+8=50	02
	CC-105	Cell Biology and Genetics	42+8=50	02
	CC-106	Practical Related to CC-101 & CC-102	50	02
	CC-107	Practical Related to CC-103 & CC-104	50	02
	CC-108	Practical Related to CC-105	50	02
DSE (Discipline Specific Elective)	DSE-101	A- Seminar Presentation OR B- Poster Presentation	50	02
AEC	AEC-101	University prescribed course	50	02
<b>FULL MARKS AND CREDITS</b>			<b>500</b>	<b>20</b>

### SECOND SEMESTER:

Course Type	Course Code		Marks (Theoretical + Class Test)	Credit
CORE (THEORY and PRACTICAL)	CC-201	Immunology: Organization and Function of Immune System	42+8=50	02
	CC-202	Animal Biotechnology: Tools-Techniques & Applications	42+8=50	02
	CC-203	Biochemistry	42+8=50	02
	CC-204	Fish Biology, Fisheries and Aquaculture	42+8=50	02
	CC-205	Biosystematics	42+8=50	02
	CC-206	Practical Related to CC-201 & CC-202	50	02
	CC-207	Practical Related to CC-203 & CC-204	50	02
	CC-208	Critical analysis of published original research article and review paper (one each)	25+25	01+01
DSE (Discipline Specific Elective)	DSE-201	A- Field Based Biodiversity Study OR B- Preparation and presentation of a research project proposal	50	02
SEC (Skill Enhancement Course)	SEC-201	University prescribed course	50	02
<b>FULL MARKS and CREDITS</b>			<b>500</b>	<b>20</b>

**THIRD SEMESTER:**

Course Type	Course Code		Marks (Theoretical+ Class Test)	Credit
CORE (THEORY and PRACTICAL)	CC-301	Animal Physiology and Endocrinology	42+8=50	02
	CC-302	Practical Related to CC-301	50	02
	CC-303	Seminar Presentation	50	02
	CC-304	Institutional Visit/Field Studies	50	02
DSE (Discipline Specific Elective) (DSE -301-305)	DSE-301A	Cellular Immunology	A. 60+15=75	03
	DSE-301B	Molecular Immunology		
	DSE-302A	Environment and Chemical Ecology		
	DSE-302B	Environmental Toxicology & Environmental Risk Assessment		
	DSE-303A	Insect Physiology and Communication & Coordination	B. 60+15=75	03
	DSE-303B	Industrial Entomology		
	DSE-304A	Fish Biology and Applied Ichthyology		
	DSE-304B	Fisheries and Hydrobiology		
	DSE-305A	Molecular Cell Biology		
	DSE-305B	Molecular Genetics		
Generic Elective (GE)	GE-301	Techniques in Molecular Biology, Biochemical & Biophysical Methods	75+25=100	04
	GE-302	Biophysics and Biostatistics	75+25=100	04
AEC	AEC-301	University prescribed course	50	02
<b>FULL MARKS AND CREDITS</b>			<b>500</b>	<b>20</b>

**N.B.-** Student will have to choose any one pair (A+B) course among DSE-301 - DSE-305 and any one course from the GE courses offered.

**FOURTH SEMESTER:**

Course Type	Course Code		Marks (Theoretical + Class Test)	Credit
CORE (THEORY and Practical)	CC-401	Gamete Biology and Developmental Biology	42+8=50	02
	CC-402	Evolution & Population Genetics	42+8=50	02
	CC-403	Practical related to CC-401	50	02
	CC-404	Comprehensive Viva Voce	25	01
	CC-405	Dissertation/Review	50	02
DSE (Discipline Specific Elective) (DSE -301- 305)	DSE-401	Clinical Immunology and Immunotechnology	60+15=75	03
	DSE-402	Chronobiology, Behavioural Ecology & Environmental Biotechnology		
	DSE-403	Insect Pests & Vectors and their Management		
	DSE-404	Fish Technology		
	DSE-405	Molecular Cell Biology & Genetics		
	DSE-406 (A to E)	DSE Related Practical Courses	50	02
Generic Elective (GE)	GE-401	Environment and Public Health	75+25=100	04
	GE-402	Wildlife Conservation, Biodiversity & Taxonomy	75+25=100	04
SEC (Skill Enhancement Course)	SEC-401	University prescribed course	50	02
<b>FULL MARKS AND CREDITS</b>			<b>500</b>	<b>20</b>

N.B.- Student will have to choose one course from DSE-401 - DSE-405 and any one course from the GE courses offered.

**Question Pattern:****Two Units for Each Theoretical Paper. Each Unit will have following Pattern.**

- Objective/MCQ Type:  $1 \times 3 = 03$  (Answer any Three out of Five)
- Short Answer Type:  $2 \times 3 = 06$  (Answer any Three out of Five)
- Descriptive Answer Type:  $6 \times 2 = 12$  (Answer any Two out of Four)

**Total Marks:** 21

**Two Units for Each Theoretical Paper of DSE course in 3<sup>rd</sup> and 4<sup>th</sup> Semester. Each Unit will have following Pattern.**

- Objective/MCQ Type:  $1 \times 4 = 04$  (Answer any Four out of Six)
- Short Answer Type:  $2.5 \times 4 = 10$  (Answer any Four out of Six)
- Descriptive Answer Type:  $8 \times 2 = 16$  (Answer any Two out of Four)

**Total Marks:** 30

**Two Units for Each Theoretical Paper of GE course in 3<sup>rd</sup> and 4<sup>th</sup> Semester. Each Unit will have following Pattern.**

- Objective/MCQ Type:  $1 \times 4 = 04$  (Answer any Four out of Six)
- Short Answer Type:  $3.5 \times 5 = 17.5$  (Answer any Five out of Eight)
- Descriptive Answer Type:  $8 \times 2 = 16$  (Answer any Two out of Four)

**Total Marks:** 37.5