



**Syllabus for M.Sc. (Zoology) Program  
Choice Based Credit System (CBCS)  
As Per NEP-2020**

## Effective From 2023-24

**SCHEME OF TEACHING & EXAMINATION AND SYLLABUS AS PER  
NEP 2020 for M. Sc. ZOOLOGY (AUTONOMOUS) Choice Based Credit  
System (Semester Pattern) Effective from 2023-2024**

M.Sc. Zoology (CBCS) Program: M.Sc. Zoology is a 4-semester course offered by The Post Graduate Department of Zoology which has been granted Academic Autonomy (Direction 14 of 2022), by The Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur. All four semesters comprise of four theory papers. In addition, First semester under study consists of two skill-based Practicals while Second semester entails an On Job Training (OJT) along with two skill-based Practicals. Furthermore, Third semester comprises of one skill based practical based on electives and a Minor Research Project. The Fourth semester comprises of Major Research Project.

**Scheme of teaching and examination for M. Sc. ZOOLOGY(CBCS) As per NEP 2020**  
**Structure and Credit Distribution of PG Degree Program for Two years**  
**Choice Based Credit System (Semester Pattern)**  
**Effective from 2023-2024**

M. Sc. Zoology Semester I											
Code	Theory / Practical	Teaching scheme (Hours / Week)				Credits	Examination Scheme				
		Theory	Practical	Total	Duration in hours		Max. Marks		Total Marks	Minimum Passing Marks	
							External	Internal		Theory	Practical
PGZO1T1	<b>Paper-1T1</b> Structure and Function of Invertebrates	4	-	4	4	3	60	40	100	50	
PGZO1T2	<b>Paper-1T2</b> Cell Biology and Genetics	4	-	4	4	3	60	40	100	50	
PGZO1T3	<b>Paper-1T3</b> Electives ( <b>Select anyone</b> )  1. Mammalian Reproductive Physiology in Male 2. Digestive and Excretory Physiology 3. General Fish Biology 4. General Entomology	4	-	4	4	3	60	40	100	50	
PGZO1T4	<b>Paper-1T4</b> Research Methodology	4	-	4	4	3	60	40	100	50	

PGZO1L1	Practical <b>1L1:</b> Based on Theory paper 1T1	-	6	6	3	3-6*	50	50	100		50
PGZO1L2	Practical <b>1L2:</b> Based on Theory paper 1T2	-	6	6	3	3-6*	50	50	100		50
	<b>TOTAL</b>	<b>16</b>	<b>12</b>	<b>28</b>	<b>22</b>		<b>340</b>	<b>260</b>	<b>600</b>	<b>200</b>	<b>100</b>

	M. Sc. Zoology Semester II											
Code	Theory / Practical			Teaching scheme (Hours / Week)		Credits	Examination Scheme					
				Theory	Practical		Training	Total	Duration in hours	Max. Marks		Total Marks
		External	Internal							Theory	Practical	
PGZO2T1	<b>Paper-2T1</b> Structure and Function of Chordates	4	-	-	4	4	3	60	40	100	50	
PGZO2T2	<b>Paper- 2T2</b> Advanced Developmental Biology	4	-	-	4	4	3	60	40	100	50	
PGZO2T3	<b>Paper-2T3</b> Electives ( <b>Select anyone</b> ) 1. Mammalian Reproductive Endocrinology 2. Brain and Muscle Physiology 3. Economic Aquaculture 4. Insect Morphology and Physiology	4	-	-	4	4	3	60	40	100	50	

PGZO2T4	<b>Paper-2T4</b> On Job Training	-	-	4	4	4	3	60	40	100	50	
PGZO2L1	<b>Practical 2L1:</b> Based on Theory 2T1	-	6	-	6	3	3-6*	50	50	100		50
PGZO2L2	<b>Practical 2L2:</b> Based on Theory 2T2	-	6	-	6	3	3-6*	50	50	100		50
	<b>TOTAL</b>	<b>12</b>	<b>12</b>	<b>04</b>	<b>28</b>	<b>22</b>		<b>340</b>	<b>260</b>	<b>600</b>	<b>200</b>	<b>100</b>

M. Sc. Zoology Semester III											
Code	Theory / Practical	Teaching scheme (Hours / Week)			Credits	Examination Scheme					
		Theory	Practical	Total		Duration in hours	Max. Marks		Total Marks	Minimum Passing Marks	
							External	Internal		Theory	Practical
PGZO3T1	<b>Paper-3T1</b> Parasitology and Immunology	4	-	4	4	3	60	40	100	50	
PGZO3T2	<b>Paper-3T2</b> Wild Life and Avian Biology	4	-	4	4	3	60	40	100	50	
PGZO3T3	<b>Paper-3T3</b> Comparative Endocrinology	4	-	4	4	3	60	40	100	50	

PGZO3T4	<b>Paper-3T4</b> Electives ( <b>Select anyone</b> ) 1. Mammalian Reproductive Physiology in Female 2. Blood and Cardiac Physiology 3. Fish Physiology 4. Insect Pest Management	4	-	4	4	3	60	40	100	50	
PGZO3P1	<b>Practical 3P1:</b> Practicals on electives	-	6	6	3	3-6*	50	50	100		50
PGZO3P2	Research Project (RP) Minor Work	-	6	6	3	3-6*	50	50	100		50
	<b>TOTAL</b>	<b>16</b>	<b>12</b>	<b>28</b>	<b>22</b>		<b>340</b>	<b>260</b>	<b>600</b>	<b>200</b>	<b>100</b>

M. Sc. Zoology Semester IV											
Code	Theory / Practical	Teaching scheme (Hours / Week)			Credits	Examination Scheme					
		Theory	Practical	Total		Duration in hours	Max. Marks		Total Marks	Minimum Passing Marks	
							External	Internal		Theory	Practical
PGZO4T1	<b>Paper-4T1</b> Biotechnology, Biostatistics, Ethology, Toxicology and Bioinformatics	4	-	4	4	3	60	40	100	50	

PGZO4T2	<b>Paper-4T2</b> Radiation and Chronobiology	4	-	4	4	3	60	40	100	50	
PGZO4T3	<b>Paper-4T3</b> Molecular Biology and Biotechnology	4	-	4	4	3	60	40	100	50	
PGZO4T4	<b>Paper-4T4</b> Electives ( <b>Select anyone</b> ) <b>1.</b> Mammalian Reproductive Toxicology <b>2.</b> Respiratory and Reproductive Physiology <b>3.</b> Fishery Technology and Fish Pathology <b>4.</b> Medical, Veterinary and Industrial Entomology	4	-	4	4	3	60	40	100	50	
PGZO4P2	Research Project (RP)Major Work	-	12	12	6	3-6*	100	100	200	-	100
	<b>TOTAL</b>	<b>16</b>	<b>12</b>	<b>28</b>	<b>22</b>		<b>340</b>	<b>260</b>	<b>600</b>	<b>200</b>	<b>100</b>

**Note:**Th = Theory; Pr= Practical/lab, \* = If required, for two days.