



**MODERN COLLEGE OF ARTS, SCIENCE  
AND COMMERCE, GANESHKHIND, PUNE-**

**16**

**(AUTONOMOUS)**

**Two Year M.Sc. Program in Zoology**

**(Faculty of Science)**

**M. Sc. Zoology Syllabus**

**Choice Based Credit System Syllabus**

**To be implemented from Academic year 2022-2023**

**BOARD OF STUDIES IN ZOOLOGY**

**Progressive Education Society's**

**MODERN COLLEGE OF ARTS, SCIENCE AND COMMERCE, GANESHKHIND, PUNE- 16**

**(AUTONOMOUS)**



**Title of the Course: M.Sc. (Zoology)**  
**PREAMBLE**

Zoology is a major subject of Basic Sciences which deals with all aspects of animal biology. It includes an interesting range of highly diverse topics. The advancements in biological Sciences demands a zoology student to be a master of many areas in the subject. This Postgraduate degree program has been designed by the Board of Studies in Zoology with a tangible understanding of what is needed from zoologists and what zoologists need to pursue as a skilled career. It emulates closely the Benchmark Statement for Biosciences and the guidelines laid down by the University Grants Commission, New Delhi. This Newly designed Curriculum is an appropriate blend of the classical aspects in Zoology which has been the "backbone" knowledge required for all zoologists and the recent and specialized areas. The flexibility in the Curriculum allows the students to choose their areas of interest leading to enhanced employability. Students will be provided sufficient number of hours for their skill development through the Lab Courses and the Project component. The lab courses have differing flavours and priorities to make a good zoologist. This degree offers specialization in Entomology along with a range of core courses like Biochemistry, Molecular Biology, Comparative Animal Physiology, Developmental Biology, Environmental Biology etc. Various cross cutting issues relating to Environmental biology have been aptly included to develop the students' sense towards human wellbeing. The field trip/surveys and study tours are included to give the student an enticing taste of what life is specially outside the walls of the classroom. On successful completion of the programme, the students are expected to understand the key life processes of human and other animal groups, the functioning of molecules, cells, tissues, organs and systems. Also the students will gain increased confidence to use initiative and judgement to make decisions in complex and changeable situations and reflect critically and analytically on personal experience and make informed decisions about further study, training and employment opportunities. The Master of Science (M.Sc.) in Zoology is a Postgraduate program under the Faculty of Science and Technology. The curriculum designed M. Sc. [I] Zoology encompasses subjects like Physiology, Entomology, Genetics, Cell Biology, Developmental Biology, Endocrinology, Biochemistry, Molecular Biology, Freshwater Zoology, Environmental Biology etc. Both classical and applied subjects of Zoology have been rightly blended to offer holistic understanding of the subject. The Choice Based Credit System (CBCS) will be implemented through this curriculum. This curriculum would certainly felicitate students to develop a strong base of the fundamentals and specialize in the desired area of their fondness and abilities. The students pursuing this program would get a privilege to select optional subjects of their choice. A total of 210 hours for theory lectures and 180 hours for laboratory work have been prescribed in each semester including a research project to inculcate the research culture amongst students. This curriculum will allow students to acquire the skill in handling scientific instruments planning and performing in the laboratory and exercising critical judgement, independent thinking and problem solving skills.





**I. Course Structure with Credit Distribution of the First year M.Sc- Zoology Syllabus**

Semester	Course	Course code	Name of the Course	Credits
I	CCTP	22-ZOUT-111	Biochemistry and Biotechniques	4 Credits (60 L)
	CCTP	22-ZOUT-112	Cell and Developmental Biology	4 Credits (60 L)
	CCTP	22-ZOUT-113	Genetics and Skills in Scientific Communication	4 Credits (60 L)
	CBOP	22-ZODT-114	Biostatistics/ Freshwater Zoology	2 Credits (30L)
	CCPP (22-ZOUT-111 +22-ZOUT-112)	22-ZOUP-114	Zoology Lab- I	4 Credits
	CCPP (22-ZOUT-113 + 22-ZODT-114)	22-ZOUP-115	Zoology Lab-II	2 Credits
	Mandatory credit course	22-50191	Human rights- I	1 Credit
	Mandatory credit course	22-50192	Cyber security- I	1 Credit
Semester II	CCTP	22-ZOUT-121	Molecular Biology and Bioinformatics	4 Credit (60 L)
	CCTP	22-ZOUT-122	Endocrinology and Comparative Animal Physiology	4 Credit (60 L)
	CCTP	22-ZOUT-123	Parasitology and Environmental Biology	4 Credit (60 L)
	CBOP	22-ZODT-124	Bioenergetics/ Ichthyology	2 Credits (30L)
	CCPP (22-ZOUT-121 +22-ZOUT-122)	22-ZOUP-124	Zoology Lab- I	4 Credits
	CCPP (22-ZOUT-123+22-ZODT-124)	22-ZOUP-125	Zoology Lab-II	2 Credits
	Mandatory credit course	22-50291	Human rights- II	1 Credit
	Mandatory credit course	22-50292	Cyber security- I	1 Credit



**II. Course Structure with Credit Distribution of the Second year M.Sc- Zoology Syllabus**

Semester	Course	Course code	Name of the Course	Credits
III	CCTP	23-ZOUT-231	Entomology	4 Credits (60 L)
	CCTP	23-ZOUT-232	Animal systematics and Research methodology	4 Credits (60 L)
	CCTP	23-ZOUT-233	Insect physiology and biochemistry and Economic Zoology	4 Credits (60 L)
	CBOP	23-ZODT-234	Immunology/ Genetic Toxicology	2 Credits (30L)
	CCPP (23-ZOUT-231+23-ZOUT-232)	23-ZOUP-234	Special Zoology Lab- I	4 Credits
	CCPP(23-ZOUT-233+23-ZODT-234)	23-ZOUP-235	Special Zoology Lab-II	2 Credits
		23-ZOUP245	Research Project	
	Mandatory credit course	23-50392	Cyber security- III	1 Credit
	Mandatory credit course	23-50394	Skill based course	2 Credits
	Mandatory credit course	23-50395	Introduction to Constitution	2 Credits
Semester IV	CCTP	23-ZOUT-241	Advanced Entomology	4 Credit (60 L)
	CCTP	23-ZOUT-242	Mammalian reproductive physiology and Aquaculture	4 Credit (60 L)
	CBOP	23-ZODT-243	Histology and Histochemistry	2 Credit (30 L)
	CBOP	23-ZODT-244	Apiculture	2 Credits (30L)
	CCPP (23-ZOUT-241+23-ZODT-243)	23-ZOUP-243	Special Zoology Lab- III	4 Credits
	CCPP(23-ZOUT-242+23-ZODT-244)	23-ZOUP-244	Special Zoology Lab-IV	2 Credits
	CCPP	23-ZOUP245	Research Project	2 Credits
	Mandatory credit course	23-50492	Cyber security- IV	1 Credit
	Mandatory credit course	23-50494	Skill based course	2 Credits

**Note:** 23-ZOUP245 Research Project is a compulsory course to be conducted throughout Semester III and IV, the assessment and evaluation will be done only in Semester IV


