Annexure 2

Detailed Syllabus for Each Course B.Sc. (Hons.) Zoology

Semester-1

ZOM111T: Animal diversity, physiology, wildlife biology & genetics

Semester: I	**Course Title:- Animal diversity, physiology, wildlife biology & genetics**	**Credit: 4**
Course No.: 111T	**Major-1 (T)**	**Hours: 4/week**

Course Outcomes: On successful completion of the course, the learner will be able to:

COs	Cognitive Abilities	Course Outcomes
CO 1	Remembering	Recall and identify various animal phyla and classes. Students will memorize key characteristics of different animal groups. Recall the basic anatomy and histology of the human digestive system.
CO 2	Understanding	On completion of the course students will be able to understand general taxonomic rules of animal classification. Students will be able to understand and classifying the invertebrate animals and this will help them to understand diversity also
CO 3	Applying	Students will be aware about zoological parks and their significance in conservation of wildlife. This knowledge enables them to understand the importance of wildlife, Why conservation needed and how this application introduced in practices.
CO 4	Remembering and Applying	Students will develop understanding of basic concepts of genetics, principles of inheritance, preparation of pedigree charts and analysis of certain genetics diseases.
CO 5	Creating	These outcomes aim to prepare graduates for diverse career opportunities in fields such as wildlife conservation, environmental management, research education and zoological parks and museums.

CO-PO Mapping:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9
CO 1	2			1					
CO 2	1							1	
CO 3			1					2	
CO 4	2	2		1					
CO 5							1		1

M.G. Science Institute (Autonomous) B.Sc. (Hons.)Zoology

Unit No.	Unit Contents	No. of Hours of Teaching
1	**Animal Diversity** ▪ Introduction and scopes of Zoology ▪ Outline of taxonomic categories in hierarchical arrangement (from Kingdom to Species) ▪ Difference between Chordates and Non-chordates ▪ Animal diversity (Nonchordates) – Systematics • Protozoa - General characters and classification up to class • Type study : Paramecium - Systematic position with salient features - External & internal structure (in brief) - Locomotion - Food & feeding mechanism - Osmoregulation - Reproduction: Binary fission and conjugation	15
2	**Anatomy, Histology and Physiology of human digestive system and dentition in mammals** ▪ Definition: Nutrition, Balance diet ▪ Anatomy - Overview of digestive system ▪ Histology of Liver, Stomach, Pancreas, Small Intestine ▪ Physiology - Digestion and absorption of following dietary components in mammals: Carbohydrates, Proteins, Lipids, Nucleic acids ▪ Dentition in Mammals - Definition - Differentiation (based on shape & according to attachment of teeth) - Succession of teeth, - Types of teeth (Incisors, Canine, Premolar, Molar) - Dental formula (Human, Horse, Dog)	15
3	**Wildlife Biology** ▪ Difference between National parks and Sanctuaries ▪ National parks and sanctuaries of Gujarat • Marine national park, Velavadar national park, Gir national park and sanctuary, Vansda national park, Wild ass sanctuary and Nalsarovar bird sanctuary [Location, Area (sq.km), Major faunal diversity] ▪ Biosphere reserves of India • Three zones (Core, Buffer and Transitional) • List of biosphere reserves of India	15

	▪ Brief account of categories of IUCN red data list. • Extinct, Critically Endangered, Endangered, Vulnerable, Least concerned ▪ Animal Conservation Projects – Project Tiger, Cheetah re-introduction project ▪ Significance and need of zoological parks and museums.	
4	**Genetics** ▪ Mendelian inheritance (Experiments on pea plant) ▪ Incomplete dominance (e.g. *Mirabilis jalapa*) ▪ Co-dominance (e.g. Roan cattle) ▪ Multiple alleles • ABO blood groups in human • Rh Factor- Erythroblastosis foetalis ▪ Complementary genes (Flower colour in *Odoratus lathyrus*) ▪ Epistasis (Dominant e.g. Dog and Recessive e.g. Coat colour in Mice) ▪ Extra chromosomal inheritance (Kappa particles in Paramecium & Shell coiling in snail) ▪ Human pedigree analysis	15