

Course outcome -Undergraduate Zoology 2016 (Honours, 1+1+1 system)

Name of the Programme	Year of Introduction	Course outcome		
		Course code	Course Name	Course Outcome
B.Sc Zoology (Honours)	2016	Part I Paper 1 Unit I (FM 50)	Group A: Diversity & Functional Anatomy of Non-chordate Forms (FM-25)	<ul style="list-style-type: none"> i. Knowledge on Classification ii. Introduction to the vast diversity of non-chordates, their architecture and Bauplan concept i. Concept of locomotion, reproduction and other physiological systems iii. Knowledge on their general characteristics, classification, life-cycle pattern of representative animals of non-chordates
			Group B: Diversity & Functional Anatomy of Chordate Forms (FM-25)	<ul style="list-style-type: none"> i. Knowledge on Classification, Systematics and Taxonomy ii. Introduction to the vast diversity of chordates and their architecture iii. Knowledge on their general characteristics and classification iv. Special adaptive feature of some classes is introduced like poison apparatus of snakes, and so on
		Part I Paper 1 Unit II (FM 50)	Group A: Cell biology (FM-25)	<ul style="list-style-type: none"> i. Introduced to the concept of different cell-organelles, cell-cycle and cell-signalling ii. Concept building on microscopy
			Group B: Genetics (FM-25)	<ul style="list-style-type: none"> i. Idea about chromosomes, DNA, RNA, mutation, sex-determination ii. Introduction to Mendelian genetics and its extension iii. Concept building on Extra-chromosomal Inheritance, Genetic Fine Structure and Transposable Genetic Elements
		Part I Paper 2 Unit I (FM 50)	Developmental Biology	<ul style="list-style-type: none"> i. Introduces students to the concept of how a foetus develop ii. Knowledge on the application of this field like <i>in vitro fertilization</i> iii. Concept building on stem cells
		Part I Paper 2 Unit II Practical (FM 50)	Animal forms and Comparative anatomy, Cytological methods and Genetics, Osteology and Embryology	<ul style="list-style-type: none"> i. Hands-on training in identification of non-chordates and chordates; dissection of some systems in these organisms ii. Staining and mounting of some non-chordate forms iii. Concept on identification of stages of cell division, pedigree analysis iv. Ability to identify larval forms and bones v. Understanding micrometry

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B.Sc Zoology (Honours)	2016	Part II Paper 3 Unit I (FM 50)	Group A: Systematics (FM-15)	<ul style="list-style-type: none"> i. Idea of construction and implications of phylogenetic trees ii. Concept building on speciation, DNA bar coding
			Group B: Evolutionary Biology & Adaptation (FM-25)	<ul style="list-style-type: none"> i. Concept building on the origin of life and different theories associated with it ii. Idea of population genetics, extinction iii. Knowledge on evolution, geological time scale and natural selection iv. Knowledge on origin and evolution of birds and horses v. Idea of adaptation in different habitats
			Group C: Animal Behaviour (FM-10)	<ul style="list-style-type: none"> i. Concept building on ethology, instinctive and learning behaviour, fixed action pattern ii. Knowledge on parental behaviour, bird migration and echolocation in bats iii. Concept building on patterns of behaviour, social and sexual behaviour and chronobiology & biological rhythm
		Part II Paper 3 Unit II (FM 50)	Group A: Ecology (FM-25)	<ul style="list-style-type: none"> i. Students introduced to the concept of ecology, population, community, eco-system etc
			Group B: Biodiversity and Conservation (FM-25)	<ul style="list-style-type: none"> i. Concept building on the role of environment in our life, ways and laws to protect the same
		Part II Paper 4 Unit I (FM 50)	Group A: Animal physiology (FM-25)	<ul style="list-style-type: none"> i. Physiological aspects of all the important system like digestive, respiratory etc ii. Study of thermo- and osmoregulation in polar bear and aquatic animals respectively
			Group B: Biochemistry (FM-25)	<ul style="list-style-type: none"> i. Introduction to biomolecules like carbohydrates, proteins, lipids and amino acids ii. Introduction to enzymes and some metabolic pathways
		Part II Paper 4 Unit II Practical (FM 50)	Ecological methods, Systematics and Evolutionary Biology, Animal Physiology and Biochemistry	<ul style="list-style-type: none"> i. Hands-on training in qualitative analysis of the biomolecules and quantitative estimation of water-soluble proteins ii. Hands-on training in estimation of pH, dissolved oxygen etc iii. Identification of non-chordate and chordate specimen

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B.Sc Zoology (Honours)	2016	Part III Paper 5 Unit I (FM 50)	Molecular Biology	i. Introduction the nucleic acids, central dogma of life i.e. replication, transcription and translation ii. Basis idea on gene-regulation and DNA repair iii. Introduction to gene cloning techniques and molecular techniques like PCR
		Part III Paper 5 Unit II (FM 50)	Group A: Parasitology and Microbiology (FM-25)	i. Introduction to the different concepts of parasitism ii. Concept building on different parasitic forms belonging to different species, their life-cycle patterns, pathogenicity etc iii. Basic idea of vector biology
			Group B: Immunology (FM-10)	i. Introduces the defence / immune system of our body
		Part III Paper 6 Unit I (FM 50)	Integration Biology and Homeostasis	i. Introduction to different types of tissues in our body and an elaborate knowledge on each type ii. An idea about the physiology of mammalian reproduction iii. Concept building of the hormones, endocrine glands and their function
		Part III Paper 6 Unit II (FM 50)	Animal Biotechnology & Applied Zoology	i. Concept building on medical and forensic biotechnology ii. Introduction to economic zoology like aquaculture, sericulture, apiculture and so on iii. Students will know about transgenic animals, animal cell culture and gene therapy
		Part III Paper 7 (FM 100)	Molecular biology, Parasitology and Microbiology, Immunology, Histological	i. Identification of parasitic forms in situ and in preserved forms ii. Hands-on training in determination of ABO Blood group iii. Hands-on training in preparation of histological sections, their staining and

			techniques and staining methods, Adaptation	<p>identification</p> <p>iv. Identification of chordates, histological and embryological sections</p>
		Part III Paper 8 (FM 100)	Instrumentation, Report on Environmental audit, Field work assessment, Biostatistics	<p>i. Students are introduced to different instruments and their application</p> <p>ii. Concept building on environmental audit and field work</p>

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B.Sc Zoology (Honours)	2016	Part I Paper 1 (FM 100)	Group A: Non-Chordate (FM-35)	iv. Knowledge on Classification ii. Introduction to the vast diversity of non-chordates, their architecture Concept of locomotion, reproduction and other physiological systems v. Knowledge on their general characteristics, classification, life-cycle pattern of representative animals of non-chordates
			Group B: Cell Biology and Genetics, Molecular Biology (FM-35)	i. Introduced to the concept of different cell-organelles, cell-cycle and cell-signalling ii. Idea about chromosomes, mutation, sex-determination iii. Introduction the nucleic acids, central dogma of life i.e. replication, transcription and translation
			Group C: Developmental Biology (FM-30)	i. Introduces students to the concept of how a foetus develop
		Part II Paper 2 (FM 100)	Group A: Chordate (FM-35)	i. Knowledge on Classification, Systematics and Taxonomy ii. Introduction to the vast diversity of chordates and their architecture iii. Knowledge on their general characteristics and classification iv. Special adaptive feature of some classes
			Group B: Ecology, Animal Behavior, Biodiversity and Wildlife (FM-35)	i. Students introduced to the concept of ecology, population, community, ecosystem etc ii. Concept building on ethology, the role of environment in our life, ways and laws to protect the same
			Group C: Histology, Endocrinology,	i. Physiological aspects of all the important system like digestive, respiratory etc

			Animal Physiology & Biochemistry (FM-30)	<ul style="list-style-type: none"> ii. Study of hormones and the endocrine system iii. Introduction to biomolecules like carbohydrates, proteins, lipid iv. Introduction to enzymes and some metabolic pathways
			Part II Paper 3 Practical (FM 100)	<ul style="list-style-type: none"> i. Hands-on training in identification of non-chordates and chordates; dissection of some systems in these organisms ii. Staining and mounting of some non-chordate forms iii. Ability to identify larval forms, histological sections and bones iv. Concept building on field work