

Maulana Azad College
Department of ZOOLOGY
Lesson Plan 2019-20
Undergraduate ZOOLOGY (Hons. & General)

Semester	Period of Semester	Tentative Dates of University Exam* (*follow the latest notification by CU)	Name of the Faculty	Course Code	Paper Name	Brief Description of the Topics	No. of Lectures			
Sem-1 (ZOOA CC)	Jun 19 - Jan 20	follow the latest notification by CU	Dr. Dipak Kumar Som	CC-1-1-TH	Non-Chordate I: Protists to Pseudocoelomates	Unit 1: Basics of Animal Classification	2			
			Dr. Sanjukta Manna			Unit 2: Protista and Metazoa	2			
			Dr. Animesh Panigrahi			Unit 3: Porifera	2			
			Dr. Rajarshi Ghosh			Unit 4: Cnidaria	2			
			Dr. Rajarshi Ghosh			Unit 5: Ctenophora	2			
			Dr. Panchali Sengupta			Unit 6: Platyhelminthes	2			
			Dr. Panchali Sengupta			Unit 7: Nematoda	2			
			Dr. Sanjukta Manna + Dr. Panchali Sengupta	CC-1-1-P	Non-Chordate I- Lab	Study of whole mount of specimens	3			
			Dr. Sanjukta Manna + Dr. Rajarshi Ghosh			Identification with reason & Systematic position of specimens (<i>Anoeba</i> to <i>Madrepora</i>)	6			
			Dr. Panchali Sengupta			Identification with reason & Systematic position of selected specimens (<i>Fasciola</i> to <i>Ascaris</i>)	6			
			Dr. Sanjukta Manna + Dr. Rajarshi Ghosh			Staining/mounting of any protozoa/helminth from gut of <i>Periplaneta</i> sp.	6			
						Dr. Susanta Roy Karmakar	CC-1-2-TH	Molecular Biology	Unit 1: Nucleic Acids	2
						Dr. Susanta Roy Karmakar			Unit 2: DNA Replication	3
						Dr. Subir Chandra Dasgupta			Unit 3: Transcription	3
Dr. Sujit Kumar Bhowal	Unit 4: Translation	3								

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			Dr. Sujit Kumar Bhowal			Unit 5: Post Transcriptional Modifications and Processing of Eukaryotic RNA	3					
			Dr. Nabanita Ghosh			Unit 6: Gene Regulation	3					
			Dr. Sujit Kumar Bhowal			Unit 7: DNA Repair Mechanisms	3					
			Dr. Sujit Kumar Bhowal			Unit 8: Molecular Techniques	3					
			Dr. Subir Chandra Dasgupta			CC-1-1-P	Molecular Biology Lab	Demonstration of polytene and lampbrush chromosome from photograph	3			
			Dr. Sujit Kumar Bhowal			Isolation and quantification of genomic DNA from goat liver		6				
			Dr. Sujit Kumar Bhowal			Agarose gel electrophoresis for DNA		6				
			Dr. Nabanita Ghosh			Histological staining of DNA and RNA in prepared slides		6				
			SEM 1 (ZOOG)				follow the latest notification by CU	Dr. Panchali Sengupta	ZOOG-CC1-1-TH	Animal Diversity	Units 4, 5	4
								Dr. Rajarshi Ghosh	ZOOG-CC1-1-P	Animal Diversity Lab	Topic 1	3
Dr. Panchali Sengupta	Topic 2 and 3	3										

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Sem-2 (CC)	Jan'20 - Jun'20	follow the latest notification by CU	Dr. Rajarshi Ghosh	CC-2-3-TH	Non-Chordate II- Coelomates	Unit 1: Introduction-Evolution of Coelom	2
			Dr. Sanjukta Manna			Unit 2: Annelida	2
			Dr. Dipak Kumar Som			Unit 3: Arthropoda	2
			Dr. Rajarshi Ghosh			Unit 4: Onychophora	2
			Dr. Animesh Panigrahi			Unit 5: Mollusca	2
			Dr. Panchali Sengupta			Unit 6: Echinodermata	2
			Dr. Subir Chandra Dasgupta			Unit 7: Hemichordata	2
			Dr. Panchali Sengupta, Dr. Rajarshi Ghosh and Dr. Abhishek Mukherjee	CC-2-3-P	Non-Chordate II- Lab	Study of specimens	3
			Dr. Sanjukta Manna + Dr. Sujit Kumar Bhowal			Anatomy study	3
			Dr. Sujit Kumar Bhowal	CC-2-4-TH	Cell Biology	Unit 1: Plasma Membrane	2
			Dr. Susanta Roy Karmakar			Unit 2: Cytoplasmic Organelles I	2
			Dr. Abhishek Mukherjee			Unit 3: Cytoplasmic Organelles II	2
			Dr. Nabanita Ghosh			Unit 4: Cytoskeleton	2
			Dr. Subir Chandra Dasgupta			Unit 5: Nucleus	2
			Dr. Nabanita Ghosh			Unit 6: Cell Cycle	4
						Unit 7: Cell Signalling	4

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			Dr. Nabanita Ghosh				
			Dr. Rajarshi Ghosh	CC-2-4-P	Cell Biology Lab	Preparation of temporary stained squash of onion/arum root tip to study various stages of mitosis	6
			Dr. Susanta Roy Karmakar			Study of various stages of meiosis from grasshopper testis	6
			Dr. Sujit Kumar Bhowal + Dr. Subir Chandra Dasgupta			Preparation of permanent slide to show the presence of Barr body in human female blood cells/cheek cells	6
			Dr. Sanjukta Manna+ Dr. Sujit Kumar Bhowal +			Preparation of permanent slide to demonstrate DNA by Feulgen reaction	6
			Dr. Nabanita Ghosh+ Dr. Rajarshi Ghosh			Preparation of permanent slide to demonstrate Cell viability study by Trypan Blue staining	6
SEM 2 (ZOOG)		follow the latest notification by CU	Dr. Panchali Sengupta	ZOOG-CC2-2-TH	Comparative Anatomy & Developmental Biology	Units- 1,2,3	6
			Dr. Subir Chandra Dasgupta			Units 6,7	4
			Dr. Rajarshi Ghosh	ZOOG-CC1-2-P	Comparative Anatomy & Developmental Biology Lab	Topic 1,2	4
			Dr. Panchali Sengupta			Topic 3,4	4

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Sem-3 (CC)	Jun 19 - Jan 20	follow the latest notification by CU	Dr. Rajarshi Ghosh	CC-3-5-TH	Chordata	Unit 1: Introduction to Chordates	2
			Dr. Rajarshi Ghosh			Unit 2: Protochordata	2
			Dr. Animesh Panigrahi			Unit 3: Agnatha	2
			Dr. Animesh Panigrahi			Unit 4: Pisces	2
			Dr. Nabanita Ghosh			Unit 5: Amphibia	2
			Dr. Sujit Kumar Bhowal			Unit 6: Reptilia	2
			Dr. Sanjukta Manna			Unit 7: Aves	2
			Dr. Abhishek Mukherjee			Unit 8: Mammals	2
			Dr. Rajarshi Ghosh	CC-3-5-P	Chordata Lab	Identification of specimens: Protochordata, Agnatha	6
			Dr. Animesh Panigrahi			Fishes	3
			Dr. Nabanita Ghosh			Amphibia	3
			Dr. Sujit Kumar Bhowal			Reptilia	3
			Dr. Abhishek Mukherjee			Mammalia	3
			Dr. Rajarshi Ghosh + Dr. Sanjukta Manna			Dissection of brain and pituitary – <i>ex situ</i> , digestive and Urino-genital system of <i>Tilapia</i> .	6
			Dr. Animesh Panigrahi			Pecten from Fowl head	3
			Dr. Sanjukta Manna			Power point presentation on study of habit, habitat or behaviour of any one animal by student – for internal assessment only	6
			Dr. Subir Chandra Dasgupta	CC-3-6-TH	Animal Physiology: Controlling and Co-ordinating System	Unit 1: Tissues	4
			Dr. Subir Chandra Dasgupta			Unit 2: Bone and Cartilage	2
			Dr. Dipak Kumar Som			Unit 3: Nervous System	2
			Dr. Rajarshi Ghosh			Unit 4: Muscular system	2
			Dr. Nabanita Ghosh			Unit 5: Reproductive System	2

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			Dr. Panchali Sengupta + Dr. Dipak Kumar Som			Unit 6: Endocrine System	4
			Unalloted	CC-3-6-P	Animal Physiology: Controlling and Co-ordinating System Lab	Recording of cardiac and simple muscle twitch with electrical stimulation	2
			Dr. Susanta Roy Karmakar			Preparation of temporary mounts	3
			Dr. Sujit Kumar Bhowal + Dr. Panchali Sengupta			Study of permanent slides of Mammalian tissues and Microtomy	6
			Dr. Rajarshi Ghosh	CC-3-7-TH	Fundamentals of Biochemistry	Unit 1: Carbohydrates	2
			Dr. Rajarshi Ghosh			Unit 2: Lipids	2
			Dr. Nabanita Ghosh			Unit 3: Proteins	2
			Dr. Susanta Roy Karmakar			Unit 4: Nucleic Acids 10	2
			Dr. Dipak Kumar Som			Unit 5: Enzymes	2
			Dr. Abhishek Mukherjee			Unit 6: Oxidative Phosphorylation	2
			Dr. Abhishek Mukherjee	CC-3-6-P	Fundamentals of Biochemistry Lab	Qualitative tests for carbohydrates, proteins and lipids	3
			Dr. Abhishek Mukherjee			Qualitative estimation of Urea & Uric acid	3
			Dr. Rajarshi Ghosh + Dr. Nabanita Ghosh			Paper chromatography of amino acids	3
						Quantitative estimation of water soluble proteins following Lowry Method	
Sem-3 (SEC-A)	Jun 19 - Jan 20	follow the latest notification by CU	Dr. Panchali Sengupta	SEC(A)-3-1-TH	Apiculture (for ZOOG)		
			Dr. Abhishek Mukherjee + Dr. Sanjukta Manna	ZOOA-SEC(A)-3-2-TH	Sericulture (for ZOOA)		

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Sem 3 (ZOOG)			Dr. Panchali Sengupta	ZOOG-CC3-3-TH	Physiology And Biochemistry	None allotted	
			Dr. Animesh Panigrahi				
			Dr. Panchali Sengupta	ZOOG-CC3-3-P	Physiology And Biochemistry Lab	Topic 1,2	
Dr. Rajarshi Ghosh	Topic 3						
Sem-4 (CC)	Jan'20 - Jun'20	follow the latest notification by CU	Dr. Panchali Sengupta	CC-4-8-TH	Comparative anatomy & Vertebrates	Unit 1: Integumentary System	2
			Dr. Sujit Kumar Bhowal			Unit 2: Digestive system	2
			Dr. Abhishek Mukherjee			Unit 3: Respiratory System	2
			Dr. Rajarshi Ghosh			Unit 4: Circulatory System	2
			Dr. Dipak Kumar Som			Unit 5: Urinogenital System	2
			Dr. Sanjukta Manna			Unit 6: Nervous system and sense organs	2
			Dr. Panchali Sengupta			Unit 7: Skeletal system	2

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			Dr. Sanjukta Manna +	CC-4-8-P	Comparative anatomy & Vertebrates Lab	Study of placoid, cycloid and ctenoid scales through permanent slides/photographs	3
			Dr. Sujit Kumar Bhowal + Dr. Rajarshi Ghosh			Study of disarticulated skeleton of toad, Pigeon, Guineapig (limb bones, vertebrae, limb and girdle) 3. Comparative study of heart and brain, with the help of model/picture	6
			Dr. Sujit Kumar Bhowal + Dr. Rajarshi Ghosh			Identification of skulls: Pigeon, one herbivore (Guineapig) and one carnivore (Dog) animal	3
			Dr. Sujit Kumar Bhowal	CC-4-9-TH	Animal Physiology: Life sustaining systems	Unit 1: Physiology of Digestion	2
			Dr. Abhishek Mukherjee			Unit 2: Physiology of Respiration	2
			Dr. Rajarshi Ghosh			Unit 3: Physiology of Circulation	2
			Dr. Panchali Sengupta			Unit 4: Physiology of Heart	2
			Dr. Subir Chandra Dasgupta			Unit 5: Thermoregulation & Osmoregulation	2
			Dr. Nabanita Ghosh		Unit 6: Renal Physiology	2	
			Dr. Rajarshi Ghosh + Dr. Abhishek Mukherjee	CC-4-9-P	Animal Physiology: Life sustaining systems Lab	ABO Blood group, Estimation of haemoglobin, Identification of blood cells, Preparation of haemin crystals, Demonstration of blood pressure	6
			Dr. Dipak Kumar Som + Dr. Sanjukta Manna			Identification of blood cells from cockroach haemolymph	6
			Dr. Sanjukta Manna	CC-4-10-TH	Immunology	Unit 1: Overview of Immune System	6
			Dr. Sanjukta Manna			Unit 2: Innate and Adaptive Immunity	2
			Dr. Nabanita Ghosh			Unit 3: Antigens	2
			Dr. Nabanita Ghosh			Unit 4: Immunoglobulins	2

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			Dr. Nabanita Ghosh			Unit 5: Major Histocompatibility Complex	2
			Dr. Nabanita Ghosh			Unit 6: Cytokines	2
			Dr. Sujit Kumar Bhowal			Unit 7: Complement System	2
			Dr. Sanjukta Manna			Unit 9: Hypersensitivity	2
			Dr. Sanjukta Manna			Unit 9: Vaccines	2
			Dr. Sanjukta Manna	CC-4-10-P	Immunology Lab	Demonstration of lymphoid organs	2
			Dr. Sanjukta Manna			Histological study	2
			Dr. Nabanita Ghosh			Demonstration of ELISA	2
Sem-4 SEC-B			Dr. Animesh Panigrahi	SEC(B)-4-1-TH	Aquarium Fish Keeping		
SEM-4 (ZOOG)		follow the latest notification by CU	Dr. Animesh Panigrahi (as per latest routine)	ZOOG-CC4-4-TH	Genetics & Evolutionary Biology		4
			Dr. Panchali Sengupta + Dr. Animesh Panigrahi +	ZOOG-CC4-4-P	Genetics & Evolutionary Biology Lab	1. Verification of Mendelian Ratio using Chi square test. 2. Identification of Human Aneuploidy using photo graph of karyotype.	3

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			Dr. Rajarshi Ghosh + Dr. Abhishek Mukherjee (as per latest routine)			3. Phylogeny of horse with diagram of limb and skull. 4. Study and identification of Darwin Finches from photographs. 5. Visit to natural history museum and submission of report.	
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