

YOGODA SATSANGA PALPARA MAHAVIDYALAYA

DEPARTMENT OF ZOOLOGY

TEACHING PLAN*YEAR : 2019-2020 *HONOURS					
Semester	Paper	Unit/Module	Teacher	No of Lecture	To be completed by
Semester-I	CC-1T Non-chordates I	Unit-1: Basics of Animal Classification	Dr. Asit Kr. Bhattacharyya	03	1 st Month
		Unit-2: Protista & Metazoa Unit-6: Plathelminthis Unit-7: Nimatoda	Mr. Ayan Kumar Bhunia	09 06 04	1 st & 2 nd Month 3 rd Month 4 th Month
		Unit-3: Porifera Unit-4: Cnidaria Unit-5: Ctenophora	Miss. Puja Panda	08 08 06	1 st Month 3 rd Month 4 th Month
	CC-1P Non-chordates I (Lab)	2. Identification of Museums specimen	Dr. Asit Kr. Bhattacharyya	06	1 st & 2 nd Month
		1. Study of whole mount of protozoa 2. Staining/mounting of any protozoa from gut of cockroach	Mr. Ayan Kumar Bhunia	06 03	1 st Month 3 rd Month
	CC-2T Ecology	Unit-1: Introduction to Ecology Unit-2: Population	Dr. Asit Kr. Bhattacharyya	06 10	1 st Month 2 nd & 3 rd Month
		Unit-3: Community Unit-4: Ecosystem	Mr. Supravat Maiti	16 14	1 st to 3 rd Month 4 th Month
		Unit-5: Applied Ecology	Miss. Puja Panda	10	3 rd & 4 th Month
		CC-2P Ecology (Lab)	4. Determination of turbidity, PH, Dissolved oxygen,	Mr. Ayan Kumar Bhunia	09

		1.Study of life tables & Survivorship curves 2.Determination of population density 3.Study of an aquatic ecosystem	Mr.Supravat Maiti	03 08 10	1 st Month 2 nd Month 4 th Month
		5.Report on visit to National park	Dr. Asit Kr. Bhattacharyya	06	1 st & 2 nd Month
Semester-II	CC-3T Non- Chordates-II	Unit-1: Introduction about Evolution of coelom & metamerism Unit-2: Annelida Unit-3: Arthropoda	Dr. Asit Kr. Bhattacharyya	04 06 08	1 st Month 2 nd Month 3 rd Month
		Unit-7 : Hemichordata	Mr. Ayan Kumar Bhunia	06	1 st Month
		Unit-4: Onychophora	Mr. Supravat Maiti	10	1 st Month
		Unit-5: Mollusca Unit-6: Echinodermata	Miss. Puja Panda	10 12	1 st & 2 nd Month 3 rd Month
		CC-3P Non Chordates-II (Lab)	1.Study of Museums Specimens	Dr. Asit Kr. Bhattacharyya	09
	CC-3P Non Chordates-II (Lab)	4.Mount of mouth parts & Digestive system & Nervous system of Periplaneta 5.Project Report on any larval forms of Non-chordates	Mr. Ayan Kumar Bhunia	09 03	2 nd & 3 rd Month 4 th Month
		2.Study of Digestive system, Nephridia of earthworm	Mr. Supravat Maiti	12	1 st to 3 rd Month
		3.T.S through pharynx, gizzard, Intestine of earthworm	Miss. Puja Panda	12	3 rd & 4 th Month
	CC-4T Cell Biology	Unit-1: Overview of Cell Unit-2: Plasma Membrane	Dr. Asit Kr. Bhattacharyya	02 08	2 nd Month 3 rd & 4 th Month

		Unit-3: Cytoplasmic organelles- I Unit-4: Cytoplasmic organelles- II	Mr. Ayan Kumar Bhunia	06 08	2 nd Month 2 nd & 3 rd Month	
		Unit-5: Cytoskeleton Unit-8: Cell Signaling	Mr. Supravat Maiti	08 08	1 st & 2 nd Month 3 rd & 4 th Month	
		Unit-6: Nucleus Unit-7: Cell Division	Miss. Puja Panda	08 08	1 st Month 2 nd Month	
	CC-4P Cell Biology (Lab)	1.Preparation of temporary stained squash of onion root tip 2.Study of various stages of meiosis	Mr. Ayan Kumar Bhunia	06	1 st & 2 nd Month	
				06	3 rd & 4 th Month	
		3. Preparation of permanent slide to demonstrate Barr Body.	Dr. Asit Kr. Bhattacharyya	06	4 th Month	
		4. Preparation of permanent slide to demonstrate: DNA by Feulgen reaction: Cell viability; Mitochondria identification.	Mr. Supravat Maiti	15	1 st to 3 rd Month	
	Semester-III	CC-5T Chordates	Unit-1: Introduction to Chordates Unit-2: Protochordata Unit-3: Origin of chordate	Dr. Asit Kr. Bhattacharyya	02	1 st Month
					05	1 st Month
					04	2 nd Month
Unit-4: Agnatha Unit-6: Amphibia Unit-8: Aves			Mr. Ayan Kumar Bhunia	04 06 07	1 st Month 2 nd Month 3 rd Month	
Unit-9: Mammals Unit-10: Zoogeography				Mr. Supravat Maiti	06 04	1 st Month 1 st Month
		Unit-5: Pisces Unit-7: Reptilia	Miss. Puja Panda	06 06	1 st Month 2 nd Month	
CC-5P Chordates (Lab)		Identification of museums specimens- 1.Protochordata 2. Agnatha 4. Amphibian 7.Pecten from Fowl head	Mr. Ayan Kumar Bhunia	03 03 03 03	1 st Month 2 nd Month 3 rd month 4 th month	

		Identification of museums specimens- 6. Mammalian 8. Dissection of Tilapia	Mr. Supravat Maiti	06 10	2 nd Month 3 rd & 4 th Month
		Identification of museums specimens- 5. Reptilia	Miss. Puja Panda	06	1 st Month
	CC-6T Animal Physiology	Unit-1: Tissues Unit-2: Bone & Cartilage	Dr. Asit Kr. Bhattacharyya	08 12	1 st Month 2 nd & 3 rd Month
		Unit-5: Reproductive System Unit-6: Endocrine System	Mr. Ayan Kumar Bhunia	12 16	1 st & 2 nd Month 3 rd & 4 th Month
		Unit-3: Nervous System	Mr. Supravat Maiti	08	1 st & 2 nd Month
		Unit-4: Muscular System	Miss. Puja Panda	07	3 rd Month
	CC-6P Animal Physiology (Lab)	4. Study of permanent slides	Dr. Asit Kr. Bhattacharyya	09	2 nd & 3 rd Month
		3. Preparation of temporary mounts	Mr. Ayan Kumar Bhunia	09	2 nd & 3 rd Month
		5. Microtomy: Preparation of permanent slide	Mr. Supravat Maiti	09	3 rd & 4 th Month
		1. Recording of simple muscle twitch with electrical stimulation 2. Demonstration of the unconditioned reflex action	Miss. Puja Panda	06 06	1 st Month 2 nd Month
	CC-7T Biochemistry	Unit-2: Lipids Unit-6: Oxidative Phosphorylation	Dr. Asit Kr. Bhattacharyya	09 08	4 th Month 4 th Month
		Unit-3: Proteins Unit-4: Nucleic Acids	Mr. Ayan Kumar Bhunia	11 10	1 st & 2 nd Month 3 rd Month
		Unit-1: Carbohydrates	Mr. Supravat Maiti	12	2 nd & 3 rd Month

		Unit-5: Enzymes	Miss. Puja Panda	06 08	1 st Month 2 nd & 3 rd Month
	CC-7P Biochemistry (Lab)	1. Qualitative test of carbohydrate protein & lipids	Dr. Asit Kr. Bhattacharyya	10	4 th Month
		2. Paper chromatography of amino acids	Mr. Ayan Kumar Bhunia	06	1 st Month
		3. Quantitative estimation of Lowry Methods		06	4 th Month
		4. Protein separation by SDS-PAGE	Mr. Supravat Maiti	10	2 nd & 3 rd Month
		5. Enzymatic activity of Trypsin & Lipase 6. To perform Acid & Alkaline phosphatase assay from serum/tissue	Miss. Puja Panda	09	2 nd Month
		09		3 rd & 4 th Month	
	SEC-1T Apiculture	Unit-1: Biology of Bees Unit-2: Rearing of Bees Unit-3: Disease & Enemies	Dr. Asit Kr. Bhattacharyya	04 04 03	1 st Month 2 nd Month 3 rd Month
		Unit-4: Bee Economy Unit-5: Entrepreneurship in Apiculture		Miss. Puja Panda	03 02
	GE-3T Aquatic Biology	Unit-3: Marine Biology Unit-4: Management of Resources	Mr. Ayan Kumar Bhunia	08 10	1 st & 2 nd Month 3 rd & 4 th Month
		Unit-1: Aquatic Biomes Unit-2: Freshwater Biology		Mr. Supravat Maiti	10 09
	GE-3P Aquatic Biology (Lab)	3. Determine the amount of Turbidity, Dissolved Oxygen, Free carbon dioxide	Mr. Ayan Kumar Bhunia	15	1 st to 3 rd Month
		4. Instruments used in Limnology		06	3 rd & 4 th Month
		1. Determine the area of a lake 2. Identify the macrophytes, phytoplanktons, zooplanktons	Mr. Supravat Marti	03	1 st Month
		06		2 nd Month	

Semester-IV	CC-8T Comparative Anatomy of Vertebrates	Unit-1: Integumentary System	Dr. Asit Kr. Bhattacharyya	06	1 st Month
		Unit-2: Skeletal System		08	1 st & 2 nd Month
		Unit-3: Digestive System		08	2 nd Month
		Unit-5: Circulatory System	Mr. Ayan Kumar Bhunia	07	1 st Month
		Unit-4: Respiratory System	Mr. Supravat Maiti	08	1 st Month
		Unit-8: Sense Organs		08	2 nd Month
		Unit-6: Urinogenital System	Miss. Puja Panda	08	1 st Month
		Unit-7: Nervous System		08	2 nd Month
	CC-8P Comparative Anatomy of Vertebrates (Lab)	1.Study of placoid, cycloid, ctenoid scales	Mr. Ayan Kumar Bhunia	03	1st Month
		2.Study of disarticulated skeleton of Toad, Pigeon, Guinea pig		12	2 nd & 3 rd Month
		3.Demonstration of Carapace Plastron of turtle	Dr. Asit Kr. Bhattacharyya	06	3 rd & 4 th Month
		4.Identification of mammalian skulls		03	4 th Month
		5. Dissection of Tilapia	Mr. Supravat Marti	09	1 st & 2 nd Month
	CC-9T Animal Physiology	Unit-1: Physiology of digestion	Dr. Asit Kr. Bhattacharyya	10	2 nd & 3 rd Month
		Unit-3: Physiology of circulation	Mr.Ayan Kumar Bhunia	10	1 st & 2 nd Month
		Unit-4: Physiology of heart		12	2 nd & 3 rd Month
		Unit-2: Physiology of respiration	Mr. Supravat Maiti	08	1 st & 2 nd Month
		Unit-5: Thermoregulation & Osmoregulation	Miss.Puja Panda	04	3 rd Month
		Unit-6: Renal physiology		08	4 th Month
	CC-9P Animal Physiology (Lab)	1.Determination of ABO blood group	Mr.Ayan Kumar Bhunia	03	1 st Month
2.Enumeration of RBC & WBC using haemocytometer			06	2 nd & 3 rd Month	
3.Estimation of haemoglobin using haemoglobinometer			06	3 rd & 4 th Month	

		4. Preparation of haemin & haemochromogen crystals	Miss.Puja Panda	06	1 st Month
		5. Recording of blood pressure		06	2 nd Month
	CC-10T Immunology	Unit-1: Overview of Immune System	Dr. Asit Kr. Bhattacharyya	08	3 rd Month
		Unit-2: Innate & Adaptive immunity		08	4 th Month
		Unit-3: Antigen	Mr.Ayan Kumar Bhunia	08	3 rd Month
		Unit-4: Immunoglobulin		10	4 th Month
		Unit-5: Major Histocompatibility Complex	Mr. Supravat Maiti	12	1 st & 2 nd Month
		Unit-6: Cytokines		10	3 rd Month
		Unit-7: Complement System		08	3 rd & 4 th Month
		Unit-8: Hypersensitivity		07	4 th Month
		Unit-9: Immunology of diseases	Miss.Puja Panda	05	1 st Month
		Unit-10: Vaccines		06	2 nd Month
	CC-10P Immunology (Lab)	1.Demonstration of lymphoid organs	Dr. Asit Kr. Bhattacharyya	06	3 rd Month
		2. Histological study through slides		06	4 th Month
		3.Preparation of stained blood film	Mr.Ayan Kumar Bhunia	06	1 st & 2 nd Month
		4. ABO blood group determination		03	3 rd Month
		5.Demonstration of ELISA	Mr. Supravat Maiti	09	1st & 2 nd Month
	SEC-2T Sericulture	Unit-1: Introduction to Sericulture	Dr. Asit Kr. Bhattacharyya	06	3 rd Month
		Unit-2: Biology of Silkworm		05	4 th Month
		Unit-3: Rearing of Silkworm	Miss.Puja Panda	06	3 rd Month
		Unit-4: Pests & Diseases		04	4 th Month
		Unit-5: Entrepreneurship in Sericulture		02	4 th Month
	GE-4T Environment & public Health	Unit-2: Climate Change	Mr.Ayan kumar Bhunia	12	1 st & 2 nd Month
		Unit-3: pollution		15	3 rd Month
		Unit-4: Waste Management Technologies		10	4 th Month
		Unit-1: Introduction to Environment	Mr. Supravat Maiti	10	1 st Month
		Unit-5: Diseases		12	2 nd Month
				12	3 rd Month

	GE-4P Environment & Public Health (Lab)	1.To determine PH, Cl,SO4, NO3,in soil & water	Mr.Ayan kumar Bhunia	12	1 st to 4 th Month
Semester-V	CC-11T Molecular Biology	Unit-1: Nucleic Acids Unit-4: Translation Unit-8: Molecular Techniques	Mr.ayan Kumar Bhunia	10 10 08	1 st Month 2 nd Month 3 rd & 4 th Month
		Unit-2: DNA Replication Unit-3: Transcription Unit-5: Post transcriptional Modification Unit-6: Gene Regulation Unit-7: DNA Repair Mechanism	Mr. Supravat Maiti	10 07 07 10 10	1 st Month 2 nd Month 3 rd Month 4 th Month 5 th Month
	CC-11P Molecular Biology (Lab)	1.Demonstration of polytene & lampbrush chromosome	Mr.Ayan Kumar Bhunia	06	1 st Month
		2.Isolation & quantification of Genomic DNA 3.Agarose gel electrophoresis for DNA	Mr. Supravat Maiti	09 12	1 st & 2 nd Month 2 nd & 3 rd Month
	CC-12T Genetics	Unit-1: Mendelian Genetics Unit-3: Mutation	Dr. Asit Kr. Bhattacharyya	10 08	1 st Month 1 st Month
		Unit-2: Linkage, Crossing Over, Chromosomal Mapping	Mr.Ayan Kumar Bhunia	10	1 st Month
		Unit-7: Transposable Genetic Elements	Mr. Supravat Maiti	12	1 st & 2 nd Month
		Unit-4: Sex Determination Unit-5:Extra-chromosomal Inheritance Unit-6: Recombination in Bacteria & Viruses	Miss. Puja Panda	04 04 06	1 st Month 1 st Month 1 st Month
	CC-12P Genetics (Lab)	2.Linkage maps Based on conjugation 3.Identification of chromosomal aberration 4.Pedigree analysis of some human inherited traits	Mr. Supravat maiti	12 12 09	1 st & 2 nd Month 2 nd & 3 rd Month 3 rd & 4 th Month
		1.Chi-square analyses	Miss. Puja Panda	06	1 st & 2 nd Month

	DSE-1T Fish & Fisheries	Unit-2: Morphology & physiology	Dr. Asit Kr. Bhattacharyya	04	2 nd Month
		Unit-4: Aquaculture		11	2 nd Month
		Unit-5: Fish in research		10	3 rd Month
		Unit-1: Fish Introduction & Classification	Miss. Puja Panda	03	3 rd Month
		Unit-3: Fisheries		12	4 th Month
	DSE-1P Fish & Fisheries (Lab)	1. Morphometric & meristic characters of fishes	Dr. Asit Kr. Bhattacharyya	06	1 st Month
		2. Study of museum fishes		06	2 nd Month
		3. Study of different types of scales		03	3 rd Month
		7. Project Report on visit to any fish farm		03	4 th Month
		4. Study of craft & gears used in Fisheries	Miss. Puja Panda	06	4 th Month
		5. Water quality criteria for Aquaculture		03	5 th Month
		6. Study of air breathing organs		06	3 rd & 4 th month
DSE-2T Animal Biotechnology	Unit-1: Introduction of Animal Biotechnology	Mr. Ayan Kumar Bhunia	15	3 rd Month	
	Unit-2: Molecular Techniques In Gene manipulation		15	3 rd & 4 th Month	
	Unit-3: Genetically Modified Organisms	Mr. Supravat maiti	15	2 nd Month	
	Unit-4: Culture Techniques & Application		15	4 th Month	
DSE-2P Animal Biotechnology (Lab)	7. Project report on animal cell culture	Mr. Ayan Kumar Bhunia	06	4 th Month	
	1. Genomic DNA isolation from E.coli	Mr. Supravat Maiti	03	1 st month	
	2. Plasmid DNA isolation from E.coli		03	2 nd Month	
	3. Restriction digestion of plasmid DNA		03	3 rd Month	
	4. Construction of circular & linear restriction map		06	4 th Month	
	5. Calculation of transformation efficiency		03	5 th Month	
	6. To study different techniques		10	3 rd & 4 th Month	

Semester-VI	CC-13T Developmental Biology	Unit-1: Introduction of Development Biology	Dr. Asit Kr. Bhattacharyya	08	1 st Month
		Unit-2: Early Embryonic Development	Mr. Ayan Kumar Bhunia	14	1 st & 2 nd Month
		Unit-3: Late Embryonic Development		14	3 rd & 4 th Month
		Unit-4: Post Embryonic Development	Mr. Supravat Maiti	13	1 st & 2 nd Month
		Unit-5: Implication of Development Biology		12	2 nd & 3 rd Month
	CC-13P Developmental Biology (Lab)	4. Project report on Drosophila culture	Dr. Asit Kr. Bhattacharyya	06	1 st Month
		1. Study of whole mounts of developmental stages of chick	Mr. Ayan Kumar Bhunia	06	1 st Month
		2. Study of developmental stages & life cycle of Drosophila		09	1 st Month
		3. Study of Different section of placenta	06	3 rd Month	
	CC-14T Evolutionary Biology	Unit-1: Life's Beginnings Unit-8: Origin & Evolution of Man	Dr. Asit Kr. Bhattacharyya	08	2 nd Month
				07	3 rd Month
		Unit-2: Historical review of Evolutionary concepts Unit-3: Geological time scale	Mr. Ayan Kumar Bhunia	07	2 nd Month
				07	3 rd Month
		Unit-5: Population genetics Unit-7: Extinction	Mr. Supravat Maiti	10	1 st & 2 nd Month
		07		2 nd & 3 rd Month	
	CC14P Evolutionary Biology (Lab)	Unit-4: Sources of variation Unit-6: Species concept Unit-9: Phylogenetic trees	Miss. Puja Panda	07	1 st Month
				07	2 nd Month
				07	3 rd Month
		1. Study of fossils from models/ pictures	Dr. Asit Kr. Bhattacharyya	06	3 rd Month
	3. Study & verification of Hardy – Weinberg laws 4. Graphical representation & interpretation of data of height/ weight	Mr. Supravat Maiti	20	1 st & 2 nd month	
15			3 rd month		
2. Study of homology & analogy from suitable specimens	Miss. Puja Panda	10	1 st & 2 nd Month		

	DSE-3T Endocrinology	Unit-2: Epiphysis, Hypothalamo – hypophysial Axis	Mr. Ayan Kumar Bhunia	12	1 st & 2 nd Month
		Unit-3: Peripheral Endocrine Glands		15	3 rd & 4 th Month
		Unit-1: Introduction to Endocrinology	Mr. Supravat Maiti	15	1 st to 3 rd Month
		Unit-4: Regulation of Hormone Action		15	4 th Month
	DSE-3P Endocrinology (Lab)	2. Study of permanent slides of all endocrine glands	Mr. Ayan Kumar Bhunia	09	1 st & 2 nd Month
		3. Microtomy & Slide preparation Of any endocrine glands		14	3 rd & 4 th Month
		1.Dissect & display of Endocrine glands in laboratory bred rat	Mr. Supravat Maiti	10	1 st & 2 nd Month
	4.Estimation of plasma level of any hormone using ELISA	15		2 nd & 3 rd Month	
	5. Designing of primer of any hormone	10		3 rd & 4 th Month	
	DSE-4T Wild Life Conservation & Management	Unit-1: Introduction to Wild life	Dr. Asit Kr. Bhattacharyya	10	2 nd & 3 rd Month
		Unit-2: Evaluation & management of Wildlife		15	3 rd Month
		Unit-3: Management of habitats		12	3 rd Month
Unit-4: Population estimation		12		4 th Month	
Unit-5: Aims & objectives of wildlife conservation		Miss. Puja Panda	13	1 st Month	
Unit-6: Management planning of wildlife in protected areas			10	2 nd Month	
Unit-7: Man & Wildlife			12	3 rd Month	
Unit-8: Protected areas			15	4 th Month	
DSE-4P Wild Life Conservation & Management (Lab)	1.Identification of flora, mammalian fauna, avian fauna, herpeto-fauna	Dr. Asit Kr. Bhattacharyya	12	3 rd Month	
	2.Demonstration of basic equipment needed in wildlife studies use		13	3 rd Month	

		3.Familiarization & study of animal evidences in the field		15	4 th Month
		4. Demonstration of different field techniques for flora & fauna	Miss. Puja Panda	10	2 nd Month
		5. Different types of method for wild life study		14	3 rd Month
		6.Trail/ transect monitoring for abundance & diversity estimation of mammals & bird (direct & indirect evidences)		12	4 th Month