

DEPARTMENT OF ZOOLOGY OF BERHAMPORE GIRLS COLLEGE

Module wise Syllabus distribution of 2nd SEM B.Sc. Zoology Hons. (January to June, 2020)

Details about Teachers

Sl No	Name of the Teacher	Designation	Contact No	E mail id
1	Bhaskar Mahanayak (BM)	Assistant Professor and Head of the Dept.	6295260820	bmahanayak@gmail.com
2	Rabiul Hoque (RH)	Assistant Professor	9609268155	rhrabiulhaque486@gmail.com
3	Sarmistha Chattopadhyay (SC)	Guest Lecturer	9735602335	
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9	Soumima Chatteraj (SMC)	Guest Lecturer	7044108774	soumimachatteraj007@gmail.com

Details about Non-teaching staff

Sl No	Name of the Staff	Designation	Contact No	Email Id
1	Mithu Hazra	Lab Attendant	9609252150	
2	Rajesh Nabik	Lab Attendant (Casual)	7872114179	

Module wise Syllabus distribution of B.Sc. 2nd SEM Zoology Hons. (January to June, 2020)

To be completed before 2nd Internal Exam

Course Code: ZOOL-H-CC-T-03		Course Title: Perspectives in Ecology		
Theory (Total 60 Lectures)				
Unit	Name of teacher	Unit title	Topics	No of Classes
1	SC	Introduction to Ecology	Autecology and synecology, Levels of organization, Laws of limiting factors.	6
2	SC (Topic 1) TM (Topic 2 and 3)	Population	1. Unique and group attributes of population: Demographic factors, life tables, fecundity tables, survivorship curves, dispersal. 2. Geometric, exponential and logistic growth, equation, r and K strategies Population regulation - density-dependent and independent factors. 3. Gause's Principle with laboratory and field examples, Lotka-Volterra equation for competition, predator-prey cycling.	8 10

3	RH	Community	Community characteristics: species diversity, abundance, dominance, richness, Vertical stratification, Ecotone and edge effect. Ecological succession with one example	10
4	TM (Topic 1) SC (Topic 2)	Ecosystem	1. Pond ecosystem in detail, Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies. 2. Nitrogen cycle.	8 4
5	RH	Applied Ecology	1. Wildlife Conservation (in-situ and ex-situ conservation). 2. Management strategies for tiger conservation; Wild life protection act (1972).	14
Practical (Total 30 Lectures)				
	BM Gr. A DM Gr. B	1	Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided.	7
	BM Gr. A DM Gr. B	2	Determination of population parameters (dominance, diversity, frequency) in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index and Importance Value Index for the same community.	8
	SCC Gr. A DKC Gr. B	3	Study of an aquatic ecosystem: Phytoplankton and zooplankton, determination of pH, and Dissolved Oxygen content (Winkler's method), Chemical Oxygen Demand and free CO ₂ .	8
	SCC Gr. A DKC Gr. B	4	Report on a visit to National Park/Biodiversity Park/Wild life sanctuary/Marine ecosystem.	7

Course Code: ZOOL-H-CC-T-04		Course Title: Cell Biology		
Theory (Total 60 Lectures)				
Unit	Name of teacher	Unit Title	Topics	No of Classes
1	DM	Overview of Cells	Basic structure of Prokaryotic and Eukaryotic cells, Viruses.	4
2	TM (Topic 1,2)	Plasma Membrane	1. Ultra structure and composition of Plasma membrane: Fluid mosaic model. 2. Transport across membrane: Active and Passive transport, Facilitated transport.	7 4

	SCC (Topic 3)		3.Cell junctions: Tight junctions, Gap junctions, Desmosomes.	
3	SCC (Topic 1) BM (Topic 2)	Cytoplasmic organelles I	1.Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes. 2.Protein sorting and mechanisms of vesicular transport.	4 4
4	RH	Cytoplasmic organelles II	Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis. Mitochondrial Respiratory Chain, Chemo-osmotic hypothesis.	7
5	TM	Cytoskeleton	Type, structure and functions of cytoskeleton.	6
6	SCC	Nucleus	Chromatin: Euchromatin and Heterochromatin and packaging (nucleosome).	6
7	RH	Cell Division	Cell cycle and its regulation, Cancer (Concept of oncogenes and tumor suppressor genes with special reference to p53, Retinoblastoma and Ras and APC	8
8	BM	Cell Signaling	1.Cell signalling transduction pathways; Types of signaling molecules and receptors. 2.GPCR and Role of second messenger (cAMP). 3. Apoptosis and Necrosis.	10
Practical (Total 30 Lecturers)				
1	RH Gr.A DKC Gr.B		Preparation of temporary stained squash of onion root tip to study various stages of mitosis.	6
2	BM Gr. A DM Gr. B		Study of various stages of meiosis.	12
3	RH Gr.A DKC Gr.B		Preparation of permanent slide to demonstrate: a. DNA by Feulgen reaction. b. Cell viability study by Trypan Blue staining.	12