

Academic Year	2019-20
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**B.P.H.E. Society's
Ahmednagar College, Ahmednagar
Internal Quality Assurance Cell
CO, PO, and PSO Attainment Sheet**

Department Name	Zoology
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Program Name	B. Sc.
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Program Outcomes(PO)

PO1	Zoology knowledge: Apply the knowledge of Zoology, Life Sciences and allied subjects to the understanding of complex
PO2	Problem analysis: Identify, review research literature, and analyse complex situations of living forms.
PO3	Design/development of solutions: Design processes/strategies that meet the specified needs with appropriate
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and
PO6	The Postgraduate and society: Apply reasoning informed by the contextual
PO7	Environment and sustainability: Understand the impact of the natural and anthropogenic activities in societal and
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the work/research
PO9	multidisciplinary settings.
PO10	scientific community and with society at large, such as, being able to comprehend and write
PO11	apply these to one's own work, as a member and leader in a team
PO12	learning in the broadest context of technological change.

Program Specific Outcome(PSO)

PSO1	To provide thorough knowledge about various animal sciences from primitive to highlyevolved animal groups." To make the
PSO2	s. To make the students aware about conservation and sustainable use of biodiversity.To inculcate interest and foundation fo
PSO3	onomical challenges related to animal sciences. and , facilitate students for taking up and shaping a successful career in Zc

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Class		M.Sc. I		Course Outcomes	Program Outcomes												PSOs		
Subject Code	50121				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Biochemistry and Biochemical Techniques.			CO1	3	2	2	2	2	1	1	2	2	2	2	2	2	2	2
Semester No	1			CO2	3	3	3	2	2	3	1	2	2	2	2	1	2	2	3
Teacher Name	Dr. N. R. Somavanshi and Ms. Anuja Bhalerao			CO3	3	3	3	2	2	3	2	2	2	2	2	1	2	2	3
Course Outcomes				CO4	3	2	2	2	2	3	2	1	1	2	1	2	2	1	2
	CO1	Studying basic terms in biochemistry and biochemical techniques. Understanding the applications of the various biochemical techniques.		CO5	3	2	2	2	2	3	1	1	1	2	1	1	2	2	2
	CO2	Understanding the structure and functions of various biomolecules.		Average	3.00	2.40	2.40	2.00	2.00	2.60	1.40	1.60	1.60	2.00	1.60	1.40	2.00	1.80	2.40
	CO3	Learning the importance of tools and techniques in biology. Illustrate the principle, working and applications of basic techniques used in biology.																	
	CO4	Studying the importance of pH, buffer and water in living systems.																	

	CO5	Learning to draw the structures of various carbohydrates and amino acids. Classify enzymes with examples.
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Class		M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50122			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Cell Biology & Developmental Biology		CO1	1	2	2	3	2	1	2	1	2	2	3	1	2	1	3
Semester No	1		CO2	2	2	3	2	3	2	2	2	1	3	2	3	3	2	2
Teacher Name	Dr. Balraj Khobragade & Ms. Geetanjali Devdhe		CO3	3	3	1	2	2	3	2	3	3	2	1	2	3	3	1
Course Outcomes			CO4	2	1	1	2	1	2	2	1	1	1	1	2	3	1	2
	CO1	Sketch and label various cell parts, types of cells and cell organelles.	CO5	2	2	1	2	1	2	2	2	1	1	1	2	2	1	2
	CO2	Explain concepts of cell signalling.	Average	2.00	2.00	1.60	2.20	1.80	2.00	2.00	1.80	1.60	1.80	1.60	2.00	2.60	1.60	2.00
	CO3	Explain cell cycle phases.																
	CO4	Learning the terms in developmental biology and understanding the significance of model organism for developmental studies.																
	CO5	Studying the concept of growth, differentiation and postembryonic development.																

Class		M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50123			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Genetics & English in Scientific Communication		CO1	3	2	1	2	1	2	1	1	1	1	1	2	3	1	3

Semester No	1	CO2	3	3	2	1	1	2	1	1	2	2	1	2	3	1	3	
Teacher Name	Ms. Sushila Kamble & Mr. D. G. Bhalsing	CO3	1	2	2	2	3	2	3	1	2	2	3	2	1	2	3	
Course Outcomes		CO4	3	1	1	1	2	3	2	2	1	1	1	1	1	1	2	
	CO1	Learning the concept of Mendelian genetics, gene, gene regulation and multiple alleles. Illustrating the modified Mendelian laws of inheritance.	CO5	1	2	3	2	2	1	1	3	2	2	2	2	3	3	2
	CO2	Learning Linkage and crossing with their types and significance. Understanding the principles of Population genetics and its application.	Average	2.20	2.00	1.80	1.60	1.80	2.00	1.60	1.60	1.60	1.60	1.60	1.80	2.20	1.60	2.60
	CO3	Writing outline of scientific paper, Title, Abstract, Discussion and Citations.																
	CO4	Preparation of scientific presentation using power point.																
	CO5	Justify importance of plagiarism check and proof reading of research articles.																

Class	M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50125		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Freshwater Zoology	CO1	2	1	2	1	1	2	2	1	1	1	1	2	2	2	2
Semester No	1	CO2	2	1	2	1	2	3	3	2	1	1	1	2	2	2	2
Teacher Name	Dr. Avinash Vanjare	CO3	2	1	2	1	2	2	2	1	1	1	1	2	2	2	2
Course Outcomes		CO4	2	1	2	1	2	2	2	2	2	2	1	2	3	3	3
	CO1	Understand types of aquatic habitats	CO5	2	2	3	1	3	3	3	3	3	2	2	3	3	3

	CO2	Environmental properties of water	Average	2.00	1.20	2.20	1.00	2.00	2.40	2.40	1.80	1.60	1.40	1.20	2.20	2.40	2.40	2.40
	CO3	Organisms and their adaptation in water																
	CO4	Ecological and economical importance of organisms																
	CO5	Conservation of water																

Class		M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50126			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Zoology Practical Paper I (Practicals in Freshwater Zoology)		CO1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1
Semester No	1		CO2	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1
Teacher Name	Dr. Avinash Vanjare		CO3	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1
Course Outcomes			CO4	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1
	CO1	Identify commercially important freshwater fish	CO5	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1
	CO2	Identify aquatic adaptations in freshwater fish	Average	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
	CO3	Prepare culture of Paramecium and Daphnia																
	CO4	Analyze Zooplankons of local; water body and estimate hardness and chlorinity of water samples																
	CO5	Evaluate bioindicators of pollution																

Class		M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50127			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Basic Zoology Lab I		CO1	2	1	3	2	2	1	2	1	2	2	1	2	2	3	1

Semester No	1	CO2	3	2	2	3	1	2	2	2	1	1	2	2	3	2	3	
Teacher Name	Dr. Balraj Khobragade & Dr. N.R. Somavanshi & Mr. D. G. Bhalsing & Ms. Anuja Bhalerao, Ms. Sushila Kamble	CO3																
Course Outcomes		CO4	3	2	2	2	2	2	1	2	1	1	1	3	2	1	2	
	CO1	Understand types of cells and ultrastructure of cell organelles and preparation of human cheek epithelial cells.	CO5	2	1	3	2	2	1	2	2	1	3	2	1	2	3	1
	CO2	Knowledge of mitosis and meiosis.	Average	2.60	1.60	2.40	2.20	1.80	1.40	1.60	1.80	1.40	1.60	1.40	2.20	2.20	2.00	1.80
	CO3	Estimating biomolecules and biochemical techniques.																
	CO4	Experimental study of medelian laws, application of population genetics.																
	CO5	Writing scientific paper, understand common errors in presentations, proof correction symbols, assigning legends and oral presentation.																

Class	M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50221		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Molecular Biology & Bioinformatics	CO1	2	2	2	2	3	2	1	2	2	2	2	3	3	2	2
Semester No	2	CO2	2	3	2	3	3	2	2	3	3	1	2	3	3	3	3
Teacher Name	Ms. Geetanjali Devdhe and Ms. jyotsna Galande	CO3	2	2	2	2	3	2	2	2	2	2	2	3	3	2	2
Course Outcomes		CO4	2	3	2	3	3	2	2	3	3	1	2	3	3	2	3

	CO1	Explain the DNA structure & types, topology, Physical properties; chromatin structure and organization.
	CO2	Discuss genome organization, DNA and Protein sequencing with their application in evolutionary studies.
	CO3	Explain the mobile DNA elements. Explain mechanism of DNA damage and repair.
	CO4	Illustrate the process of DNA replication, transcription, translation and their regulations. Justify the post translational and post transcriptional modifications.
	CO5	Illustrate the database tools with their significance.

CO5	2	2	2	2	3	2	3	3	2	1	2	3	3	3	2
Average	2.00	2.40	2.00	2.40	3.00	2.00	2.00	2.60	2.40	1.40	2.00	3.00	3.00	2.40	2.40

Class		<u>M.Sc. I</u>	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50222			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Endocrinology & Parasitology		CO1	1	2	2	2	1	3	2	1	2	2	1	2	1	3	2
Semester No	2		CO2	2	2	1	3	2	2	1	1	1	2	2	1	2	2	1
Teacher Name	Mr. D. G. Bhalsing		CO3	1	1	2	1	3	2	2	3	2	1	2	2	3	1	1
Course Outcomes			CO4	2	1	2	2	1	1	2	2	3	2	1	2	2	3	2
	CO1	Discuss roles of pituitary gland and pineal body and Illustrate mechanism of hormone action and role of hormone receptors.	CO5	2	2	2	1	2	1	2	1	3	2	1	2	1	2	3

	CO2	Describe the role of osmoregulatory and gastrointestinal hormone and role of hormones in moulting, change in body colour, yolk synthesis and insect development.	Average	1.60	1.60	1.80	1.80	1.80	1.80	1.80	1.60	2.20	1.80	1.40	1.80	1.80	2.20	1.80
	CO3	Justify hormones as co-ordination molecules and justify significance of biological clocks and rhythms.																
	CO4	Describe role of parasites in public health and hygiene and Explain pathogenicity and control measures of parasites.																
	CO5	Explain morphology and life cycle of common parasites and Justify importance of parasite control strategies and significance of vectors and disease transmission.																

Class	M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50223		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Comparative Animal Physiology & Environmental Biology	CO1	1	0	1	1	0	1	0	1	0	0	1	1	1	1	1
Semester No	2	CO2	1	0	1	1	0	1	0	1	0	0	1	1	0	1	1
Teacher Name	Dr. Pande GS.& ...Dr. Avinash Vanjare	CO3	1	0	1	1	0	1	0	1	0	0	1	1	1	1	1
Course Outcomes		CO4	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1

	CO1	Explain physiology of: digestion, respiration, Muscle contraction, excretion and thermoregulation	CO5	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1
	CO2	Explain Mechanisms of: Chemical communication and structure and functions of sense organs	Average	1.00	0.40	1.00	1.00	0.40	1.00	0.40	0.60	0.00	0.00	1.00	1.00	0.80	1.00	1.00
	CO3	Explain regulatory mechanisms in animals, and illustrate process of osmoregulation in animals. Justify survival strategies of animals in varied climatic conditions																
	CO4	List the endangered, endemic and extinct species of India. Identify human impact on natural resources and explain concepts in population ecology.																
	CO5	Illustrate wildlife management practices, and, effect of climate and human activities on Biodiversity. Effect of lifestyle on environment																

Class	M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50224		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Metabolic Pathways	CO1	2	3	2	1	2	0	0	1	2	2	1	2	2	0	2
Semester No	2	CO2	2	2	2	2	2	0	0	1	1	2	0	1	1	0	2
Teacher Name	Ms. Sushila Kamble	CO3	3	2	1	1	2	0	0	1	1	2	0	1	1	0	2
Course Outcomes		CO4	2	2	2	2	2	2	0	1	2	3	1	2	2	0	2

	CO1	Studying basic terminologies of metabolic pathways. Understanding the laws of thermodynamics, concept of free energy and ATP as currency molecule.	CO5	3	3	1	1	2	0	0	1	1	2	0	2	2	0	2
	CO2	Learning the Concepts and regulation of metabolism. understanding the oxidation of fatty acids and its significance.	Average	2.40	2.40	1.60	1.40	2.00	0.40	0.00	1.00	1.40	2.20	0.40	1.60	1.60	0.00	2.00
	CO3	Studying electron transport chain and oxidative phosphorylation.																
	CO4	Illustrating the reactions, energetics and regulation of glycolysis, glycogen biosynthesis, TCA cycle, Purine and Pyrimidine metabolism.																
	CO5	Learning to write the general reactions of various metabolic pathways and justifying the role of enzymes in metabolism.																

Class	M.Sc. I	Course Outcomes	Program Outcomes												PSOs			
Subject Code	50226		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Zoology Practical Paper II	CO1	3	3	3	3	3	3	3	3	2	2	2	3	1	3		
Semester No	2	CO2	3	3	3	3	3	3	2	2	2	2	3	3	0	3		
Teacher Name	Ms. Sushila Kamble	CO3	3	3	3	2	2	2	2	2	2	2	3	3	0	3		
Course Outcomes		CO4	3	3	3	2	3	2	1	2	2	2	3	3	0	3		
	CO1	Identifying the common diseases/conditions caused due to errors in metabolism.	CO5	3	3	3	2	2	2	1	2	2	3	2	3	3	0	3

	CO2	Learning the use of basic equipment in biochemistry lab.	Average	3.00	3.00	3.00	2.40	2.60	2.40	1.80	2.20	2.20	2.20	2.00	2.80	3.00	0.20	3.00
	CO3	Studying the enzyme activity from suitable material and learning the effect of various physical and chemical factors on enzyme activity.																
	CO4	Understanding the absorption studies of biomolecules and principle of Colorimetry and Spectrophotometry.																
	CO5	Estimating the concentration of cholesterol, uric acid, amino acids and starch. learning Separation of biomolecules by chromatographic methods.																

Class	M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50227		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Basic Zoology Lab II	CO1	3	2	2	2	3	1	1	2	2	1	1	2	2	1	3
Semester No	2	CO2	2	2	1	2	1	1	2	1	2	1	3	1	2	2	1
Teacher Name	Ms. Geetanjali Devdhe , & Mr. D. G. Bhalsing & Dr. G.S Pande & Ms. Jyotsna Galande	CO3	1	1	2	2	3	1	2	2	3	1	2	2	1	3	2
Course Outcomes		CO4	0	0	0	0	1	0	1	1	1	1	1	1	1	0	1
	CO1	Understanding isolation of nucleic acids and their estimation.	CO5	3	2	2	2	3	1	1	1	1	1	2	2	1	3

	CO2	Understand retrocerebral complex of cockroach and Perform gonadectomy, pancreatotomy, and thyroidectomy in rat.	Average	1.80	1.40	1.40	1.60	2.20	0.80	1.40	1.40	1.80	1.00	1.60	1.60	1.60	1.40	2.00
	CO3	Study parasites from digestive tract of cockroach. Understand lifecycle of parasitic protozoa and helminths.																
	CO4	Demonstrate RBCs in vertebrates; Effect of body size on oxygen consumption; Determine bleeding and clotting time in vertebrates; Determine heartbeat of crab																
	CO5	Learning various nucleotide and protein databases.																

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Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50302			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Entomology-I(4C)	CO1	3	3	3	2	2	3	3	2	3	2	3	3	2	2	3	
Semester No	3	CO2	3	2	2	1	2	2	2	1	1	2	2	2	2	1	2	
Teacher Name	Dr. Rahul Gaikwad	CO3	2	2	3	1	1	2	3	1	1	2	2	2	2	1	2	
Course Outcomes		CO4	3	2	3	1	1	2	3	1	1	2	2	2	2	1	2	
	CO1	Understanding entomology applications. Learning Insects and understand origin and evolution of insects and their relation to other arthropods.	CO5	2	2	2	1	1	2	2	1	1	2	2	2	1	2	
	CO2	Learning the outline of Classification of insects up to family with distinguishing characters and examples of each order and family.	Average	2.60	2.20	2.60	1.20	1.40	2.20	2.60	1.20	1.40	2.00	2.20	2.20	2.00	1.20	2.20
	CO3	Studying the structure, chemical composition and functions of Integument and Derivatives of Integument.																
	CO4	Understanding the structure, modifications of insect body regions and their appendages. Learning the Comparative anatomical and histological structure of various body systems.																

	CO5	Learning the location structure and functions of various Endocrine glands, Exocrine glands and Light and Sound producing organs in various insects
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Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50304			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Immunology(2C)		CO1	3	3	3	2	2	3	2	3	1	1	1	2	3	3	3
Semester No	3		CO2	2	3	2	3	2	3	2	2	1	1	1	1	2	2	2
Teacher Name	Dr. Ivan Aranha		CO3	3	3	2	3	2	3	2	3	1	1	1	1	2	2	2
Course Outcomes			CO4	3	3	2	3	2	3	2	3	1	1	1	1	2	2	2
	CO1	Introduction to Immunology	CO5	3	2	2	3	2	3	2	2	1	1	1	1	2	2	2
	CO2	Understanding self, nonself, antigen, antibody	Average	2.80	2.80	2.20	2.80	2.00	3.00	2.00	2.60	1.00	1.00	1.00	1.20	2.20	2.20	2.20
	CO3	Studying Humoral immunity, and cell mediated immunity																
	CO4	Study of Theories of antibody synthesis																
	CO5	Understanding the immunological techniques and Vaccination																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50308			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Insect Physiology and Biochemistry(2C)		CO1	1	1	0	2	1	0	0	1	1	1	1	1	1	1	1
Semester No	3		CO2	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1
Teacher Name	Dr Pande G S		CO3	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1
Course Outcomes			CO4	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1
	CO1	Explain integument structure & describe the process of digestion in insects	CO5	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1

	CO2	Explain the characteristics of haemolymph and types of haemocytes. Illustrate the structure, physiology and biochemistry of flight muscle.	Average	1.00	1.00	0.00	1.20	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	CO3	Demonstrate the process of excretion, detoxification and water balance. Justify the role of insect hormones in physiological processes.															
	CO4	Justify the role of insect hormones in physiological processes.															
	CO5	Explain insect flight muscle physiology															

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50310			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Parasitology(2C)		CO1	3	2	1	2	2	3	1	2	2	1	2	2	2	3	1
Semester No	3		CO2	2	2	3	1	2	2	2	1	1	2	2	1	3	2	2
Teacher Name	Mr. D. G. Bhalsing		CO3	2	1	2	3	1	3	2	3	3	2	1	1	2	3	3
Course Outcomes			CO4	2	3	1	2	3	2	3	2	1	1	2	2	1	2	3
	CO1	Define terminology of parasitology and explain concepts of animal association.	CO5	1	2	3	2	3	1	3	2	2	3	3	3	2	1	2
	CO2	Describe role of parasites in public health and hygiene.	Average	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.00	1.80	1.80	2.00	1.80	2.00	2.20	2.20
	CO3	Explain morphology and life cycle of common parasites.																
	CO4	Explain pathogenicity and control measures of parasites.																
	CO5	Justify importance of parasite control strategies and significance of vectors and disease transmission.																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50311			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Fundamentals of Systematics (2C)		CO1	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1
Semester No	3		CO2	1	1	0	0	2	0	2	0	1	1	1	1	1	1	1
Teacher Name	Dr. Pande G S		CO3	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1
Course Outcomes			CO4	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1
	CO1	Explain principles, methods of biological classification and Animal diversity.	CO5	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1
	CO2	Explain the principles of classification and nomenclature	Average	0.20	0.20	0.00	0.80	0.40	0.00	1.20	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	CO3	Learn basic taxonomic procedures and techniques in molecular systematics																
	CO4	Explain the importance of taxonomic keys and taxonomic characters																
	CO5	Explain Concept and Process of Phylogeography																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50312			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Insect Ecology (2C)		CO1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
Semester No	3		CO2	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
Teacher Name	Dr. Avinash Vanjare		CO3	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
Course Outcomes			CO4	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
	CO1	To explain ecological associations between insect and human	CO5	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
	CO2	To explain insects with respect to: Temperature, Wind, Climate Change	Average	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	CO3	To explain feeding mechanisms in insects.																

CO4	To explain natural enemies of insects and insect population dynamics
CO5	To explain roles of insects in ecosystem. Explain threats to insect and insect conservation,

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50315			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Entomology -I(3C)	CO1	3	2	2	3	3	2	2	3	2	2	2	3	3	3	3	
Semester No	3	CO2	3	3	2	1	2	1	3	2	2	2	2	3	3	2	3	
Teacher Name	Dr. Rahul Gaikwad	CO3	2	3	2	1	1	1	2	2	1	1	1	2	3	2	3	
Course Outcomes		CO4	3	3	3	2	2	2	2	3	2	1	1	3	3	2	2	
	CO1	Learning Method of collection, preservation & presentation of insects.	CO5	2	3	2	1	1	1	2	2	1	1	1	2	3	2	2
	CO2	Study of Taxonomy and diagnostic features up to family of Apterygote, Exopterygote and Endopterygote insects.	Average	2.60	2.80	2.20	1.60	1.80	1.40	2.20	2.40	1.60	1.40	1.40	2.60	3.00	2.20	2.60
	CO3	Study of generalized insect: Grasshopper/ Cockroach with respect to its Systematic position, Habit, Habitat , Important morphological features and systems.																
	CO4	Learning dissection of an insect pest (Plant bug or any insect pest as per local availability and legal permissibility) so as to study taxonomy, diagnostic features and anatomy pertaining to digestive, nervous and reproductive systems.																

	CO5	Studying temporary mounting of mouth parts, antenna, legs, wings, spiracles and tympanum of a generalized insect.
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Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50317			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Immunology (2C)		CO1	3	3	3	3	1	3	1	3	2	1	1	1	2	2	3
Semester No	3		CO2	3	2	3	3	1	3	1	3	1	2	2	2	3	3	2
Teacher Name	Dr. Ivan Aranha		CO3	3	2	3	3	1	3	1	3	1	1	1	2	2	2	2
Course Outcomes			CO4	3	2	3	3	1	3	1	3	1	1	2	2	2	2	2
	CO1	Ouchterlony technique to show antigen and antibody reaction	CO5	3	2	3	3	1	3	1	3	2	2	2	3	2	2	2
	CO2	Immuno-electrophoresis	Average	3.00	2.20	3.00	3.00	1.00	3.00	1.00	3.00	1.40	1.40	1.60	2.00	2.20	2.20	2.20
	CO3	Studying Histology of Lymphoid Organs																
	CO4	To estimate the antigen concentration																
	CO5	To perform ELISA																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50321			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Insect Physiology and Biochemistry (2C)		CO1	1	1	1	2	2	1	1				1	1	0	1	
Semester No	3		CO2	1	1	1	2	2	1	1	1	1	1	1	1	0	1	
Teacher Name	Dr. Pande G S		CO3	1	1	1	2	2	1	1	1	1	1	1	1	0	1	
Course Outcomes			CO4	1	1	1	2	2	1	1	1	1	1	1	1	0	1	
	CO1	Learn practical skills in Insect physiology (Estimation of glycogen)	CO5	1	1	1	2	2	1	1	1	1	1	1	1	0	1	
	CO2	Learn practical skills in Insect physiology (Effect of temperature on water loss in insect)	Average	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	

CO3	Learn practical skills in Insect physiology (Study of heart and hemocytes of insect).
CO4	Learn practical skills in Insect physiology (Chitin Test by Von Wisselingh's method)
CO5	Learn practical skills in Insect physiology (Oxygen consumption in aquatic insect)

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50323			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Parasitology (2C)		CO1	2	1	3	2	2	3	3	2	1	3	2	1	3	2	1
Semester No	3		CO2	3	2	1	1	3	2	2	3	2	1	2	2	2	2	3
Teacher Name	Mr. D. G. Bhalsing		CO3	2	2	2	3	1	3	1	2	2	2	3	1	3	2	2
Course Outcomes			CO4	3	2	3	3	2	3	2	3	3	3	1	2	1	3	2
	CO1	Understand lifecycle, role as vector and control measures of common parasites.	CO5	2	3	2	2	3	1	3	2	1	1	2	3	3	1	2
	CO2	Knowledge of ectoparasites and endoparasites of wild rat, cattle, dog, chick and human.	Average	2.40	2.00	2.20	2.20	2.20	2.40	2.20	2.40	1.80	2.00	2.00	1.80	2.40	2.00	2.00
	CO3	Understand lifecycle of parasitic protozoa.																
	CO4	Understand lifecycle of parasitic helminths.																
	CO5	Study parasites from digestive tract of cockroach.																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50324			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Fundamentals of Systematics (2C)		CO1	1	1	1	2	2	1	1	1	1	1	1	1	0	1	

Semester No	3	CO2	1	1	1	2	2	1	1	1	1	1	1	1	1	0	1
Teacher Name	Dr. Pande G S	CO3	1	1	1	2	2	1	1	1	1	1	1	1	1	0	1
Course Outcomes		CO4	1	1	1	2	2	1	1	1	1	1	1	1	1	0	1
	CO1	Learn practical skills in the field of systematics (Collection of animal specimens)	CO5	1	1	1	2	2	1	1	1	1	1	1	1	0	1
	CO2	Learn practical skills in the field of systematics (Preservation of animal specimen)	Average	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
	CO3	Learn practical skills in the field of systematics (Curation and Identification of animal taxa specimens)															
	CO4	Learn practical skills in the field of systematics (study of museum specimens of diffrenet animal phyla)															
	CO5	Learn practical skills in the field of systematics (Planning, Managing, conducting and Reporting Field visit/Research institute visit).															

Class	M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50325		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Research Projects (2C)	CO1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
Semester No	3	CO2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
Teacher Name	Prof. DG Bhalsing, Dr. Balraj Khobragade, Dr. Pande GS, Dr. Ivan Aranha, Dr. Avinash Vanjare, Dr. Rahul Gaikwad	CO3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
Course Outcomes		CO4	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
	CO1	To design, and plan a scientific research work	CO5	1	1	1	2	1	1	1	1	1	1	1	1	1	1
	CO2	To learn to review and refer scientific literature	Average	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	CO3	To learn how to execute experimental work															

	CO4	To learn to analyze results of experiments and observations
	CO5	To learn to Publish Research findings. To Present research findings in Conferences and other scientific gatherings

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50402			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Entomology-II (4C)		CO1	3	3	3	2	2	3	1	2	1	2	2	2	3	2	2
Semester No	4		CO2	2	2	2	2	2	1	1	1	1	2	2	2	2	0	2
Teacher Name	Dr. Rahul Gaikwad		CO3	3	3	3	3	2	3	2	2	1	2	3	3	3	2	3
Course Outcomes			CO4	2	2	2	2	2	1	1	1	1	1	2	2	2	0	2
	CO1	Learning Gametogenesis, Fertilization and oviposition in insects.	CO5	3	3	3	3	2	3	2	2	1	1	3	3	2	1	3
	CO2	Studying embryonic developmental stages such as Cleavage, Blastoderm and Germ band formation; Gastrulation, Blastokinesis, differentiation of germ layers, Segmentation and Appendages formation and organogenesis.	Average	2.60	2.60	2.60	2.40	2.00	2.20	1.40	1.60	1.00	1.60	2.40	2.40	2.40	1.00	2.40
	CO3	Understanding post-embryonic developmental stages such as Nymph, Naiad, larva, Pupa and Metamorphosis. Studying specialized reproductive mechanisms.																
	CO4	Understanding Hadorn's experiments with imaginal disc, Regeneration and Aging.																

	CO5	Studying Occurrence, Initiation, Preparations for diapauses and its Controls.
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Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50404			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Economic Zoology (2C)		CO1	1	2	1	2	3	1	1	2	3	2	1	2	3	2	2
Semester No	4		CO2	2	1	2	3	2	3	3	3	2	3	1	2	2	3	2
Teacher Name	Dr. Balraj Khobragade		CO3	2	2	1	2	3	3	2	1	2	2	3	1	3	2	3
Course Outcomes			CO4	3	3	2	3	2	1	3	2	2	2	3	2	3	2	3
	CO1	Knowledge of parasitic protozoans and helminths.	CO5	1	3	3	1	3	2	3	3	1	3	2	2	2	2	3
	CO2	Understanding of sponge culture and significance of coral reef.	Average	1.80	2.20	1.80	2.20	2.60	2.00	2.40	2.20	2.00	2.40	2.00	1.80	2.60	2.20	2.60
	CO3	Understand various animal husbandry industries.																
	CO4	Economic importance of amphibians, reptiles and birds.																
	CO5	Knowledge of model animals in pharmaceutical industry.																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50406			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Mammalian Repreoductive Physiology (2C)		CO1	3	3	3	3	1	3	1	3	1	1	1	1	3	1	1
Semester No	4		CO2	3	3	3	3	1	3	1	3	1	1	1	1	3	1	1
Teacher Name	Dr. Ivan Aranha		CO3	3	3	3	3	1	3	1	3	1	1	1	1	3	1	1
Course Outcomes			CO4	3	3	3	3	1	3	1	3	1	1	1	1	3	1	1
	CO1	Introduction to Reproductive organ	CO5	3	3	3	3	1	3	1	3	1	1	1	1	3	1	1
	CO2	Understanding external sexual dimorphisms	Average	3.00	3.00	3.00	3.00	1.00	3.00	1.00	3.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00

	CO3	Studying Sexual cycles
	CO4	Understanding Reproductive dysfunctions
	CO5	Studying artificial control of reproduction and contraception

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50409			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Pollution Biology(2C)		CO1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	
Semester No	4		CO2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	
Teacher Name	Dr. Avinash Vanjare		CO3	1	1	1	1	0	1	1	1	1	1	1	1	1	1	
Course Outcomes			CO4	1	1	1	1	0	1	1	1	1	1	1	1	1	1	
	CO1	To explain concept of Biosphere, Pollution and its types	CO5	1	1	1	1	0	1	1	1	1	1	1	1	1	1	
	CO2	To explain Bioassay, test organisms and pollutant bioassay	Average	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
	CO3	To explain pollution monitoring strategies; and impact of pollutants on animals																
	CO4	To explain the process, causes and consequences of: Bioaccumulation, Biomagnification																
	CO5	To explain Environmental quality assessment. Biomedical waste and its management																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50410			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Apiculture(2C)		CO1	2	3	1	2	2	3	1	2	2	1	3	2	2	3	1
Semester No	4		CO2	3	2	2	3	3	2	3	3	3	2	3	2	3	2	2
Teacher Name	Mr. D. G. Bhalsing		CO3	2	1	3	2	2	3	2	1	3	2	1	2	2	2	1
Course Outcomes			CO4	1	3	2	1	2	3	2	2	1	3	2	2	2	2	3

	CO1	Knowledge of beekeeping, systematics, bee species, bee morphology, colony organisation, polymorphism, bee flora, foraging and honey flow periods.	CO5																
	CO2	Understand beekeeping as an occupation.	Average	2	2	3	3	1	1	3	1	2	2	3	3	3	1	3	
	CO3	Purchasing, managing, manipulation of bee colony and taking care of bee diseases and enemies.																	
	CO4	Knowledge of beekeeping techniques and apiary management.																	
	CO5	information of important institutions pertinent to apiculture.																	

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50414			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Entomology- II(3C)		CO1	2	2	2	2	1	1	2	2	1	2	1	2	2	2	2
Semester No	4		CO2	3	3	3	3	2	2	2	2	1	3	1	2	2	2	2
Teacher Name	Dr. Rahul Gaikwad		CO3	3	3	2	3	2	2	2	2	1	3	1	3	2	2	2
Course Outcomes			CO4	2	3	3	3	1	2	2	2	1	3	1	3	2	3	3
	CO1	Studying the histological structure of male and female reproductive system of insect.	CO5	3	2	2	2	1	1	2	2	1	2	1	2	2	2	2
	CO2	Studying the eggs of different insects.	Average	2.60	2.60	2.40	2.60	1.40	1.60	2.00	2.00	1.00	2.60	1.00	2.40	2.00	2.20	2.20
	CO3	Identifying the different embryonic stages of insects.																
	CO4	studying the different post-embryonic stages of insects.																

	CO5	Learning to demonstrate various body organs, systems and appendages of housefly and butterfly.
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Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50416			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Economic Zoology(2C)		CO1	3	2	3	3	1	3	2	1	2	1	3	2	3	2	1
Semester No	4		CO2	2	3	2	3	2	2	2	3	3	2	1	2	2	2	3
Teacher Name	Dr. Balraj Khobragade		CO3	3	2	1	3	3	2	3	2	1	2	3	2	3	2	3
Course Outcomes			CO4	2	2	3	2	3	3	2	3	3	2	1	3	1	3	2
	CO1	Understand various apiculture equipment.	CO5	2	3	3	2	3	1	3	2	1	3	2	2	2	1	3
	CO2	Knowledge of poultry breeds and feeding utensils in poultry.	Average	2.40	2.40	2.40	2.60	2.40	2.20	2.40	2.20	2.00	2.00	2.00	2.20	2.20	2.00	2.40
	CO3	Understanding of fishing tools - crafts and gear.																
	CO4	Understand morphology of edible freshwater fishes.																
	CO5	Identify locally available fishes.																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50418			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Mammalian Repreoductive Physiology (2C)		CO1	3	2	2	3	1	3	1	3	1	1	1	3	1	1	
Semester No	4		CO2	3	2	2	3	1	3	1	3	1	1	1	3	2	2	
Teacher Name	Dr. Ivan Aranha		CO3	3	2	2	3	1	3	1	3	1	1	1	3	1	2	
Course Outcomes			CO4	3	2	2	3	1	3	1	3	1	1	1	3	2	1	
	CO1	Studying anatomy of male and female reproductive system	CO5	3	2	2	3	1	3	1	3	1	1	1	3	1	1	

	CO2	Studying Histology of male and female reproductive system	Average	3.00	2.00	2.00	3.00	1.00	3.00	1.00	3.00	1.00	1.00	1.00	1.00	3.00	1.40	1.40
	CO3	To study the estrous cycle																
	CO4	Understanding family planning methods																
	CO5	Study of contraceptive devices																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50421			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Pollution Biology (2C)		CO1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
Semester No	4		CO2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Teacher Name	Dr. Avinash Vanjare		CO3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Course Outcomes			CO4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	CO1	Study of bioindicators of pollution. Analysis of CO, CO2, NO pollution	CO5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	CO2	Study of eutrophic lakes, pond, rivers. Visit to water filtration plant	Average	1.00	1.00	1.00	1.00	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	CO3	Analysis of pH and salinity, Calcium, Magnesium of water/soil.																
	CO4	Determination of LC50 for insecticide																
	CO5	Estimation of sulphate from water sample. Soil analysis																

Class		M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50422			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Apiculture (2C)		CO1	2	3	2	1	3	2	2	3	2	3	2	1	3	2	1
Semester No	4		CO2	2	2	3	2	3	2	1	2	3	1	3	2	1	3	2
Teacher Name	Mr. D. G. Bhalsing		CO3	3	2	1	3	2	3	2	2	2	3	1	3	2	2	2
Course Outcomes			CO4	1	2	3	2	2	2	3	1	1	2	3	1	2	3	3

	CO1	Knowledge of honeybee species, castes and beemorphology.	CO5	2	3	2	2	1	1	2	3	3	2	1	2	3	3	2
	CO2	Knowledge of beekeeping equipments.	Average	2.00	2.40	2.20	2.00	2.20	2.00	2.00	2.20	2.20	1.80	2.20	1.80	2.20	2.40	2.00
	CO3	Knowledge of bee products.																
	CO4	Knowledge of apiary.																
	CO5	Knowledge of bee flora.																

Class	M. Sc -II	Course Outcomes	Program Outcomes												PSOs		
Subject Code	50423		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Research Project (2C)	CO1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
Semester No	4	CO2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
Teacher Name	Prof. DG Bhalsing, Dr. Balraj Khobragade, Dr. Pande GS, Dr. Ivan Aranha, Dr. Avinash Vanjare, Dr. Rahul Gaikwad	CO3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
Course Outcomes		CO4	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
	CO1	To design, and plan a scientific research work	CO5	1	1	1	2	1	1	1	1	1	1	1	1	1	1
	CO2	To learn to review and refer scientific literature	Average	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	CO3	To learn how to execute experimental work															
	CO4	To learn to analyze results of experiments and observations															
	CO5	To learn to Publish Research findings. To Present research findings in Conferences and other scientific gatherings															

CO-PO Mapping

		Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
FY	FY	1	50121	3.00	2.40	2.40	2.00	2.00	2.60	1.40	1.60	1.60	2.00	1.60	1.40	
		2	50122	2.00	2.00	1.60	2.20	1.80	2.00	2.00	1.80	1.60	1.80	1.60	2.00	
		3	50123	2.20	2.00	1.80	1.60	1.80	2.00	1.60	1.60	1.60	1.60	1.60	1.80	
		4	50125	2.00	1.20	2.20	1.00	2.00	2.40	2.40	1.80	1.60	1.40	1.20	2.20	
		5	50126	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
		6	50127	2.60	1.60	2.40	2.20	1.80	1.40	1.60	1.80	1.40	1.60	1.40	2.20	
		7	50221	2.00	2.40	2.00	2.40	3.00	2.00	2.00	2.60	2.40	1.40	2.00	3.00	
		8	50222	1.60	1.60	1.80	1.80	1.80	1.80	1.80	1.60	2.20	1.80	1.40	1.80	
		9	50223	1.00	0.40	1.00	1.00	0.40	1.00	0.40	0.60	0.00	0.00	1.00	1.00	
		10	50224	2.40	2.40	1.60	1.40	2.00	0.40	0.00	1.00	1.40	2.20	0.40	1.60	
		11	50226	3.00	3.00	3.00	2.40	2.60	2.40	1.80	2.20	2.20	2.20	2.00	2.80	
		12	50227	1.80	1.40	1.40	1.60	2.20	0.80	1.40	1.40	1.80	1.00	1.60	1.60	
SY		1	50302	2.60	2.20	2.60	1.20	1.40	2.20	2.60	1.20	1.40	2.00	2.20	2.20	
		2	50304	2.80	2.80	2.20	2.80	2.00	3.00	2.00	2.60	1.00	1.00	1.00	1.20	
		3	50308	1.00	1.00	0.00	1.20	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	
		4	50310	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.00	1.80	1.80	2.00	1.80	
		5	50311	0.20	0.20	0.00	0.80	0.40	0.00	1.20	0.00	1.00	1.00	1.00	1.00	
		6	50312	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	
		7	50315	2.60	2.80	2.20	1.60	1.80	1.40	2.20	2.40	1.60	1.40	1.40	2.60	
		8	50317	3.00	2.20	3.00	3.00	1.00	3.00	1.00	3.00	1.40	1.40	1.60	2.00	
		9	50321	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
		10	50323	2.40	2.00	2.20	2.20	2.20	2.40	2.20	2.40	1.80	2.00	2.00	1.80	
		11	50324	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
		12	50325	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
		13	50402	2.60	2.60	2.60	2.40	2.00	2.20	1.40	1.60	1.00	1.60	2.40	2.40	
		14	50404	1.80	2.20	1.80	2.20	2.60	2.00	2.40	2.20	2.00	2.40	2.00	1.80	
		15	50406	3.00	3.00	3.00	3.00	1.00	3.00	1.00	3.00	1.00	1.00	1.00	1.00	
		16	50409	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
		17	50410	2.00	2.20	2.20	2.20	2.00	2.40	2.20	1.80	2.20	2.00	2.40	2.20	
		18	50414	2.60	2.60	2.40	2.60	1.40	1.60	2.00	2.00	1.00	2.60	1.00	2.40	
		19	50416	2.40	2.40	2.40	2.60	2.40	2.20	2.40	2.20	2.00	2.00	2.00	2.20	
		20	50418	3.00	2.00	2.00	3.00	1.00	3.00	1.00	3.00	1.00	1.00	1.00	1.00	
		21	50421	1.00	1.00	1.00	1.00	1.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	
		22	50422	2.00	2.40	2.20	2.00	2.20	2.00	2.20	2.20	1.80	2.20	1.80		
	SY	23	50423	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
2.2	1.76	1.76	1.466666667	1.466667	1.906667	1.026667	1.173333	1.173333	1.466667	1.173333	1.026667
1.36	1.36	1.088	1.496	1.224	1.36	1.36	1.224	1.088	1.224	1.088	1.36
1.848	1.68	1.512	1.344	1.512	1.68	1.344	1.344	1.344	1.344	1.344	1.512
1.68	1.008	1.848	0.84	1.68	2.016	2.016	1.512	1.344	1.176	1.008	1.848
0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0	0	0.84	0.84
2.322667	1.429333	2.144	1.965333333	1.608	1.250667	1.429333	1.608	1.250667	1.429333	1.250667	1.965333
1.36	1.632	1.36	1.632	2.04	1.36	1.36	1.768	1.632	0.952	1.36	2.04
1.088	1.088	1.224	1.224	1.224	1.224	1.224	1.088	1.496	1.224	0.952	1.224
0.733333	0.293333	0.733333	0.733333333	0.293333	0.733333	0.293333	0.44	0	0	0.733333	0.733333
1.376	1.376	0.917333	0.802666667	1.146667	0.229333	0	0.573333	0.802667	1.261333	0.229333	0.917333
2.68	2.68	2.68	2.144	2.322667	2.144	1.608	1.965333	1.965333	1.965333	1.786667	2.501333
1.8	1.4	1.4	1.6	2.2	0.8	1.4	1.4	1.8	1	1.6	1.6
1.490667	1.261333	1.490667	0.688	0.802667	1.261333	1.490667	0.688	0.802667	1.146667	1.261333	1.261333
1.904	1.904	1.496	1.904	1.36	2.04	1.36	1.768	0.68	0.68	0.68	0.816
0.733333	0.733333	0	0.88	0.733333	0	0	0.733333	0.733333	0.733333	0.733333	0.733333
1.36	1.36	1.36	1.36	1.496	1.496	1.496	1.36	1.224	1.224	1.36	1.224
0.136	0.136	0	0.544	0.272	0	0.816	0	0.68	0.68	0.68	0.68
0.84	0.84	0.84	0.84	0.84	0.84	0	0.84	0.84	0.84	0.84	0.84
2.184	2.352	1.848	1.344	1.512	1.176	1.848	2.016	1.344	1.176	1.176	2.184
3	2.2	3	3	1	3	1	3	1.4	1.4	1.6	2
1	1	1	2	2	1	1	1	1	1	1	1
2.4	2	2.2	2.2	2.2	2.4	2.2	2.4	1.8	2	2	1.8
1	1	1	2	2	1	1	1	1	1	1	1
1	1	1	2	1	1	1	1	1	1	1	1
1.490667	1.490667	1.490667	1.376	1.146667	1.261333	0.802667	0.917333	0.573333	0.917333	1.376	1.376
1.224	1.496	1.224	1.496	1.768	1.36	1.632	1.496	1.36	1.632	1.36	1.224
2.52	2.52	2.52	2.52	0.84	2.52	0.84	2.52	0.84	0.84	0.84	0.84
0.68	0.68	0.68	0.68	0	0.68	0.68	0.68	0.68	0.68	0.68	0.68
1.36	1.496	1.496	1.496	1.36	1.632	1.496	1.224	1.496	1.36	1.632	1.496
1.768	1.768	1.632	1.768	0.952	1.088	1.36	1.36	0.68	1.768	0.68	1.632
2.016	2.016	2.016	2.184	2.016	1.848	2.016	1.848	1.68	1.68	1.68	1.848
3	2	2	3	1	3	1	3	1	1	1	1
1	1	1	1	1	1	0.8	1	1	1	1	1
2	2.4	2.2	2	2.2	2	2	2.2	2.2	1.8	2.2	1.8
1	1	1	2	1	1	1	1	1	1	1	1

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
73.33333	73.33333	73.33333	73.33333333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333
68	68	68	68	68	68	68	68	68	68	68	68
84	84	84	84	84	84	84	84	84	84	84	84
84	84	84	84	84	84	84	84	84	84	84	84
84	84	84	84	84	84	84	84	#DIV/0!	#DIV/0!	84	84
89.33333	89.33333	89.33333	89.33333333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333
68	68	68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68	68	68
73.33333	73.33333	73.33333	73.33333333	73.33333	73.33333	73.33333	73.33333	#DIV/0!	#DIV/0!	73.33333	73.33333
57.33333	57.33333	57.33333	57.33333333	57.33333	57.33333	#DIV/0!	57.33333	57.33333	57.33333	57.33333	57.33333
89.33333	89.33333	89.33333	89.33333333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333
100	100	100	100	100	100	100	100	100	100	100	100
57.33333	57.33333	57.33333	57.33333333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333
68	68	68	68	68	68	68	68	68	68	68	68
73.33333	73.33333	#DIV/0!	73.33333333	73.33333	#DIV/0!	#DIV/0!	73.33333	73.33333	73.33333	73.33333	73.33333
68	68	68	68	68	68	68	68	68	68	68	68
68	68	#DIV/0!	68	68	#DIV/0!	68	#DIV/0!	68	68	68	68
84	84	84	84	84	84	#DIV/0!	84	84	84	84	84
84	84	84	84	84	84	84	84	84	84	84	84
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
57.33333	57.33333	57.33333	57.33333333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333
68	68	68	68	68	68	68	68	68	68	68	68
84	84	84	84	84	84	84	84	84	84	84	84
68	68	68	68	#DIV/0!	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68	68	68
68	68	68	68	68	68	68	68	68	68	68	68
84	84	84	84	84	84	84	84	84	84	84	84
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100

CO-PSO MAPPING

CO-PSO ATTAINMENT

Percentage CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
FY	1 50121	2.00	1.80	2.40
	2 50122	2.60	1.60	2.00
	3 50123	2.20	1.60	2.60
	4 50125	2.40	2.40	2.40
	5 50126	1.00	1.00	1.00
	6 50127	2.20	2.00	1.80
	7 50221	3.00	2.40	2.40
	8 50222	1.80	2.20	1.80
	9 50223	0.80	1.00	1.00
	10 50224	1.60	0.00	2.00
	11 50226	3.00	0.20	3.00
	12 50227	1.60	1.40	2.00
SY	1 50302	2.00	1.20	2.20
	2 50304	2.20	2.20	2.20
	3 50308	1.00	1.00	1.00
	4 50310	2.00	2.20	2.20
	5 50311	1.00	1.00	1.00
	6 50312	1.00	1.00	1.00
	7 50315	3.00	2.20	2.60
	8 50317	2.20	2.20	2.20
	9 50321	1.00	0.00	1.00
	10 50323	2.40	2.00	2.00
	11 50324	1.00	0.00	1.00
	12 50325	1.00	1.00	1.00
	13 50402	2.40	1.00	2.40
	14 50404	2.60	2.20	2.60
	15 50406	3.00	1.00	1.00
	16 50409	1.00	1.00	1.00
	17 50410	2.40	2.00	2.00
	18 50414	2.00	2.20	2.20
	19 50416	2.20	2.00	2.40
	20 50418	3.00	1.40	1.40
	21 50421	1.00	1.00	1.00
22 50422	2.20	2.40	2.00	
23 50423	1.00	1.00	1.00	

Course	PSO1	PSO2	PSO3
50121	1.466667	1.32	1.76
50122	1.768	1.088	1.36
50123	1.848	1.344	2.184
50125	2.016	2.016	2.016
50126	0.84	0.84	0.84
50127	1.965333	1.786667	1.608
50221	2.04	1.632	1.632
50222	1.224	1.496	1.224
50223	0.586667	0.733333	0.733333
50224	0.917333	0	1.146667
50226	2.68	0.178667	2.68
50227	1.6	1.4	2
50302	1.146667	0.688	1.261333
50304	1.496	1.496	1.496
50308	0.733333	0.733333	0.733333
50310	1.36	1.496	1.496
50311	0.68	0.68	0.68
50312	0.84	0.84	0.84
50315	2.52	1.848	2.184
50317	2.2	2.2	2.2
50321	1	0	1
50323	2.4	2	2
50324	1	0	1
50325	1	1	1
50402	1.376	0.573333	1.376
50404	1.768	1.496	1.768
50406	2.52	0.84	0.84
50409	0.68	0.68	0.68
50410	1.632	1.36	1.36
50414	1.36	1.496	1.496
50416	1.848	1.68	2.016
50418	3	1.4	1.4
50421	1	1	1
50422	2.2	2.4	2
50423	1	1	1

Course	PSO1	PSO2	PSO3
50121	73.33333	73.33333	73.33333
50122	68	68	68
50123	84	84	84
50125	84	84	84
50126	84	84	84
50127	89.33333	89.33333	89.33333
50221	68	68	68
50222	68	68	68
50223	73.33333	73.33333	73.33333
50224	57.33333	#DIV/0!	57.33333
50226	89.33333	89.33333	89.33333
50227	100	100	100
50302	57.33333	57.33333	57.33333
50304	68	68	68
50308	73.33333	73.33333	73.33333
50310	68	68	68
50311	68	68	68
50312	84	84	84
50315	84	84	84
50317	100	100	100
50321	100	#DIV/0!	100
50323	100	100	100
50324	100	#DIV/0!	100
50325	100	100	100
50402	57.33333	57.33333	57.33333
50404	68	68	68
50406	84	84	84
50409	68	68	68
50410	68	68	68
50414	68	68	68
50416	84	84	84
50418	100	100	100
50421	100	100	100
50422	100	100	100
50423	100	100	100