

Academic Year	2018-19
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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	M.Sc.
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Program Outcomes(PO)

PO1	To provide thorough knowledge about various animal sciences from primitive to highlyevolved animal groups.
PO2	To make the students aware of applications of Zoology subject in various industries.
PO3	To highlight the potential of various branches of Zoology to become an entrepreneur.
PO4	To equip the students with skills related to laboratory as well as field based studies.
PO5	To make the students aware about conservation and sustainable use of biodivers
PO6	To inculcate interest and foundation for further studies in Zoology
PO7	To address the socio-economical challenges related to animal sciences.
PO8	To facilitate students for taking up and shaping a successful career in Zoology.
PO9	
PO10	
PO11	
PO12	

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

Academic Year :	2018-19
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Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50101			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Biochemistry- I (3C)		CO1	3	3	2	3	1	3	2	3	2	2	3
Semester No	1		CO2	3	3	2	1	1	2	1	3	3	1	2
Teacher Name	Dr. N.R. Somavanshi		CO3	3	3	1	2	0	3	1	2	3	1	3
Course Outcomes			CO4	2	3	1	1	0	3	1	3	2	1	2
	CO1	Studying basic terms in. Understanding the applications Biochemistry of the various fields of life science.	CO5	3	3	2	2	1	3	2	3	3	2	3
	CO2	Understanding the structure and Classification of various biomolecules.	Average	2.80	3.00	1.60	1.80	0.60	2.80	1.40	2.80	2.60	1.40	2.60
	CO3	Studying the importance of pH, buffer, biological buffer systems and water in living systems.												
	CO4	Learning to draw the structures of various carbohydrates and amino acids. Learning the concept of enzymes, its classification and Enzyme activity.												
	CO5	Learning Biological significance of all Biomolecules and vitamins.												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50102			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Cell Biology (3C)		CO1	1	2	2	3	1	1	2	1	1	2	2
Semester No	1		CO2	3	2	1	1	2	2	2	3	2	2	3
Teacher Name	Dr. Balraj Khobragade		CO3	2	1	2	3	2	1	1	2	1	1	3
Course Outcomes			CO4	1	2	3	2	1	3	2	2	2	2	1
	CO1	Understand different cell types and cell shapes.	CO5	2	2	1	1	2	2	2	2	2	3	1
	CO2	membrane potential and synaptic transmission.	Average	1.80	1.80	1.80	2.00	1.60	1.80	1.80	2.00	1.60	2.00	2.00
	CO3	and nucleus.												
	CO4	regulation.												
	CO5	Understand organisation and chemistry of cytoskeleton.												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs			
Subject Code	50103			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
Subject Name	Genetics (2C)		CO1	3	3	2	2	1	2	2	2	2	1	2	
Semester No	1		CO2	3	2	1	1	1	2	1	2	2	1	2	
Teacher Name	Ms. Anuja Bhalerao		CO3	3	3	2	2	1	3	2	3	3	1	2	
Course Outcomes			CO4	3	2	1	2	1	2	1	2	2	1	2	
	CO1	Justifying the inheritance of qualitative and quantitative gene regulation and multiple alleles. Illustrating the disorder. significance. and its application.	CO5	3	3	1	2	2	3	2	3	2	2	3	
	CO2		Average	3.00	2.60	1.40	1.80	1.20	2.40	1.60	2.40	2.20	1.20	2.20	
	CO3														
	CO4														
	CO5														

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs			
Subject Code	50104			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
Subject Name	Biostatistics (2C)		CO1	1	2	3	1	1	3	2	2	2	2	3	
Semester No	1		CO2	1	2	2	1	1	2	1	2	2	1	2	
Teacher Name	Ms. Anuja Bhalerao & Dr. Rahul Gaikwad		CO3	1	2	2	1	1	2	1	1	2	1	3	
Course Outcomes			CO4	1	2	2	2	1	3	2	2	2	2	2	
	CO1	application and uses of Biostatistics. Learning Correlation and regression of data. of dispersion. Learning the concept of probability distribution and of significance. learning t test, F test and Chi square	CO5	1	2	2	2	1	3	1	2	2	2	3	
	CO2		Average	1.00	2.00	2.20	1.40	1.00	2.60	1.40	1.80	2.00	1.60	2.60	
	CO3														
	CO4														
	CO5														

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs			
Subject Code	50105			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
Subject Name	Skills in Scientific Communication and Writing		CO1	2	1	3	1	2	2	3	2	3	2	1	
Semester No	1		CO2	1	2	1	2	2	3	2	1	3	2	2	
Teacher Name	Mr. D. G. Bhalsing		CO3	3	3	2	3	3	2	1	3	2	3	2	
Course Outcomes			CO4	1	2	3	2	2	1	2	3	1	2	3	
	CO1	English language. communication. communication and IT. funding. observations and results, discussion and summary.	CO5	3	2	3	2	3	3	2	3	2	1	3	
	CO2		Average	2.00	2.00	2.40	2.00	2.40	2.20	2.00	2.40	2.20	2.00	2.20	
	CO3														
	CO4														
	CO5														

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50106			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	FreshWater Zoology (2C)		CO1	2	1	2	1	1	2	2	1	2	2	2
Semester No	1		CO2	2	1	2	1	2	3	3	2	2	2	2
Teacher Name	Dr. Avinash Vanjare		CO3	2	1	2	1	2	2	2	1	2	2	2
Course Outcomes			CO4	2	1	2	1	2	2	2	2	3	3	3
	CO1	Understand types of aquatic habitats	CO5	2	2	3	1	3	3	3	3	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	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	50107			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Biochemistry- I(3C)		CO1	1	2	2	3	1	3	1	3	2	1	3
Semester No	1		CO2	1	2	3	3	1	2	1	3	2	1	2
Teacher Name	Dr. N.R. Somavanshi		CO3	1	3	3	3	1	2	1	3	2	1	3
Course Outcomes			CO4	1	3	2	3	1	3	1	3	2	1	3
	CO1	Learning the preparation of acid and alkali solutions.	CO5	1	2	2	3	1	3	1	3	2	1	3
	CO2	learning to prepare buffer of known PH.	Average	1.00	2.40	2.40	3.00	1.00	2.60	1.00	3.00	2.00	1.00	2.80
	CO3	Estimating the enzyme activity and studying its progress curve.												
	CO4	Biochemical estimation of glucose, aminoacids, proteins and fats.												
	CO5	Isolation of protein using isoelectric point.												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50108			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Cell Biology (2C)		CO1	1	2	3	2	2	1	2	1	1	1	3
Semester No	1		CO2	2	1	1	3	1	2	2	1	2	1	1
Teacher Name	Dr. Balraj Khobragade		CO3	3	1	1	2	2	1	3	3	2	2	1
Course Outcomes			CO4	1	2	2	1	3	2	1	2	1	2	3
	CO1	Prepare temporary slide of human epithelial cheek cells.	CO5	2	3	1	2	2	3	1	1	2	3	1
	CO2	Understand different stages in mitosis and mitotic index.	Average	1.80	1.80	1.60	2.00	2.00	1.80	1.80	1.60	1.60	1.80	1.80
	CO3	Understand different stages of meiosis.												
	CO4	Knowledge of ultrastructure of cell organelles.												
	CO5	Knowlege of different types of cells.												

Class	M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
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Subject Code	50109	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Genetics(2C)	CO1	2	3	2	2	1	3	2	3	2	1	3
Semester No	1	CO2	2	3	2	2	2	3	2	3	2	2	3
Teacher Name	Ms. Anuja Bhalerao	CO3	2	3	1	1	1	3	2	3	2	1	2
Course Outcomes		CO4	2	3	2	2	1	2	3	2	1	1	2
	CO1	Studying sex linked inheritance in <i>Drosophila</i> .	CO5	2	3	2	2	1	2	3	2	1	3
	CO2	Studying Monohybrid and dihybrid ratio in <i>Drosophila</i> .	Average	2.00	3.00	1.80	1.80	1.20	2.60	2.40	2.60	1.60	2.60
	CO3	Isolation of polytene chromosome to studying the bands and											
	CO4	Studying human mendelian traits in population and											
	CO5	Performing pedigree analysis and linkage study.											

Class	M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50111		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Skills in Scientific Communication	CO1	3	2	1	3	3	2	2	1	1	2	3
Semester No	1	CO2	2	3	2	2	1	3	2	2	3	2	2
Teacher Name	Mr. D. G. Bhalsing	CO3	2	2	3	3	2	3	2	3	3	2	1
Course Outcomes		CO4	2	1	3	3	2	1	3	2	3	3	2
	CO1	Understand English vocabulary, syntax, and spoken English.	CO5	3	2	2	1	3	2	1	3	2	2
	CO2	Knowledge of common errors in written and oral	Average	2.40	2.00	2.20	2.40	2.20	2.00	2.20	2.40	2.00	2.00
	CO3	writing outline of a scientific paper, and preparation of											
	CO4	suggesting title, writing Abstract, keywords, material											
	CO5	Knowledge of proof correction symbols and proof reading,											

Class	M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50112		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Fresh Water Zoology(2C)	CO1	1	1	1	1	1	1	1	1	1	1	1
Semester No	1	CO2	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
Course Outcomes		CO4	1	1	1	1	1	1	1	1	1	1	1
	CO1	Identify commercially important freshwater fish	CO5	1	1	1	1	1	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	1.00	1.00
	CO3	Prepare culture of Paramecium and Daphnia											
	CO4	estimate hardness and chlorinity of water samples											
	CO5	Evaluate bioindicators of pollution											

Class	M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50201		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Biochemistry- II(3C)	CO1	2	3	2	1	1	3	1	3	2	1	3
Semester No	2	CO2	2	2	2	2	1	2	1	3	2	1	3
Teacher Name	Dr. N. R. Somavanshi	CO3	3	2	1	1	1	3	2	3	2	1	3

Course Outcomes			CO4	2	2	2	2	1	2	2	3	2	1	3	
	CO1	Understanding the laws of thermodynamics, concept of understanding the oxidation of fatty acids and its phosphorylation. glycogen biosynthesis, TCA cycle, Purine and Pyrimidine metabolic pathways and justifying the role of enzymes	CO5	3	3	1	1	1	3	2	3	2	1	3	
	CO2		Average	2.40	2.40	1.60	1.40	1.00	2.60	1.60	3.00	2.00	1.00	3.00	
	CO3														
	CO4														
	CO5														

Class	M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50202		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Molecular Biology(3C)	CO1	3	2	2	2	2	2	1	2	3	1	2
Semester No	2	CO2	3	3	2	2	1	2	1	2	2	1	2
Teacher Name	Dr. N.R.Somavanshi	CO3	3	3	3	3	1	3	2	2	2	2	3
Course Outcomes		CO4	2	3	2	2	1	3	1	3	2	1	2
	CO1	properties; chromatin structure and organization.	CO5	3	2	3	2	1	2	2	2	1	3
	CO2	Studying the genome organization, C value paradox.	Average	2.80	2.60	2.40	2.20	1.20	2.40	1.40	2.20	1.20	2.40
	CO3	translation and their regulations. Justify the post											
	CO4	mechanism of transposition											
	CO5	mechanisms.											

Class	M. Sc -I	Course Outcomes	Program Outcomes								PSOs			
Subject Code	50203		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
Subject Name	Developmental Biology(2C)	CO1	2	2	2	1	1	2	2	3	3	1	2	
Semester No	2	CO2	3	3	2	2	2	2	1	2	2	2	2	
Teacher Name	Dr. Rahul Gaikwad	CO3	3	3	3	2	1	2	1	3	2	1	2	
Course Outcomes		CO4	3	2	2	2	1	2	1	3	2	1	3	
	CO1	understanding the significance of model organism for	CO5	1	1	2	1	1	2	1	2	1	2	
	CO2	pattern. Understanding the spermatogenesis and oogenesis.	Average	2.40	2.20	2.20	1.60	1.20	2.00	1.20	2.60	2.20	1.20	2.20
	CO3	pattern formation with examples.												
	CO4	Studying neural competence and induction.												
	CO5	postembryonic development.												

Class	M. Sc -I	Course Outcomes	Program Outcomes								PSOs			
Subject Code	50204		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
Subject Name	Endocrinology(2C)	CO1	2	2	3	1	2	3	2	2	2	3	2	
Semester No	2	CO2	3	2	2	3	2	1	3	2	1	2	3	
Teacher Name	Mr. D. G. Bhalsing	CO3	2	3	1	2	3	2	3	3	2	1	2	
Course Outcomes		CO4	3	2	1	3	2	2	3	3	3	2	1	
	CO1	Discuss roles of pituitary gland and pineal body.	CO5	1	2	2	3	2	3	1	2	2	3	2

	CO2	Explain hormonal regulation of biomolecules, mineral	Average	2.20	2.20	1.80	2.40	2.20	2.20	2.40	2.40	2.00	2.20	2.00
	CO3	Describe the role of osmoregulatory and gas exchange												
	CO4	Illustrate mechanism of hormonal control and role of hormone												
	CO5	Justify hormones as co-ordination molecules and justify												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50205			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Comparative Animal Physiology(2C)		CO1	1	0	1	1	0	1	0	1	1	1	1
Semester No	2		CO2	1	0	1	1	0	1	0	1	0	1	1
Teacher Name	Dr. Pande G S		CO3	1	0	1	1	0	1	0	1	1	1	1
Course Outcomes			CO4	1	0	0	1	0	1	1	1	1	1	1
	CO1	Explain physiology of digestion, respiration, muscle	CO5	1	1	1	1	1	1	1	1			
	CO2	Explain mechanisms of chemical communication and	Average	1.00	0.20	0.80	1.00	0.20	1.00	0.40	1.00	0.75	1.00	1.00
	CO3	Explain regulatory mechanisms in animals, and illustrate												
	CO4	Justify survival strategies of animals in varied climatic												
	CO5	Justify roles of hormones in control of physiological												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50206			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Biochemical Techniques(2C)		CO1	1	1	1	1	0	1	1	1	1	1	1
Semester No	2		CO2	1	1	1	1	0	1	1	1	1	1	1
Teacher Name	Dr. Avinash Vanjare		CO3	1	1	1	1	0	1	1	1	1	1	1
Course Outcomes			CO4	1	1	1	1	0	1	1	1	1	1	1
	CO1	To Explain principles and applications of various types of	CO5	1	1	1	1	0	1	1	1	1	1	1
	CO2	To Explain principles and applications of various types of	Average	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
	CO3	To Explain principles and applications of various types of												
	CO4	Explain principles and applications of various types of												
	CO5	To Explain principles and applications of various types of												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50207			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Biochemistry - II (3C)		CO1	3	3	3	3	3	3	3	3	1	3	
Semester No	2		CO2	3	3	3	3	3	3	2	3	0	3	
Teacher Name	Dr. N.R. Somavanshi		CO3	3	3	3	3	2	2	2	3	0	3	
Course Outcomes			CO4	3	3	3	3	3	2	1	3	0	3	
	CO1	due to errors in metabolism.	CO5	3	3	3	3	2	2	1	3	1	3	
	CO2	lab.	Average	3.00	3.00	3.00	3.00	2.60	2.40	1.80	3.00	0.40	3.00	
	CO3	and learning the effect of various physical and												

CO4	and principle of Colorimetry and Spectrophotometry.
CO5	amino acids and starch. learning Separation of

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50208			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Molecular Biology (2C)		CO1	3	3	3	3	3	3	2	3	3	2	3
Semester No	2		CO2	3	3	2	3	2	3	1	3	3	1	3
Teacher Name	Dr. N.R. Somavanshi		CO3	3	3	3	3	2	3	1	3	3	1	3
Course Outcomes			CO4	3	3	3	3	2	3	1	3	3	1	3
	CO1	Learning to isolate DNA and RNA from Biological samples	CO5	3	3	3	2	3	2	2	3	3	2	3
	CO2	Studying safety techniques involved in molecular biology laboratory.	Average	3.00	3.00	2.80	2.80	2.40	2.80	1.40	3.00	3.00	1.40	3.00
	CO3	Learning quantification of isolated biomolecules.												
	CO4	Learning agarose gel electrophoresis and native PAGE.												
	CO5	Studying Nucleotide and protein databases.												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50209			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Developmental Biology (2C)		CO1	3	3	3	3	2	3	1	3	3	2	3
Semester No	2		CO2	2	3	3	3	1	3	1	3	3	1	2
Teacher Name	Dr. Rahul Gaikwad		CO3	2	3	3	2	1	2	1	2	2	1	2
Course Outcomes			CO4	2	3	3	2	1	2	1	3	2	1	3
	CO1	learning <i>in-vitro</i> culturing method of chick embryo	CO5	2	3	3	3	1	3	1	3	2	1	3
	CO2	Studying imaginal discs in <i>Drosophila</i> .	Average	2.20	3.00	3.00	2.60	1.20	2.60	1.00	2.80	2.40	1.20	2.60
	CO3	Studying gross anatomy and histology of various embryonic												
	CO4	Studying embryonic and post embryonic development using												
	CO5	Studying grafting of Hensen's node.												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50210			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Endocrinology (2C)		CO1	3	2	2	1	3	3	2	2	2	2	3
Semester No	2		CO2	1	2	3	3	2	3	3	2	3	1	2
Teacher Name	Mr. D. G. Bhalsing		CO3	2	3	3	2	3	2	2	3	2	3	2
Course Outcomes			CO4	3	1	2	3	2	1	3	3	3	2	1
	CO1	Understand histology of invertebrate and vertebrate	CO5	2	2	3	1	3	2	2	1	2	3	3
	CO2	Understand retrocerebral complex of cockroach.	Average	2.20	2.00	2.60	2.00	2.60	2.20	2.40	2.20	2.40	2.20	2.20
	CO3	Perform gonadectomy in rat.												
	CO4	Perform pancreatectomy in rat.												
	CO5	Perform thyroidectomy in rat.												

Class		M. Sc -I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50211			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Comparative Animal Physiology		CO1	0	0	0	0	1	0	1	1	1	0	1
Semester No	2		CO2	0	0	0	0	1	0	1	1	1	0	1
Teacher Name	Dr. Pande GS		CO3	0	0	0	0	1	0	1	1	1	0	1
Course Outcomes			CO4	0	0	0	0	1	0	1	1	1	0	1
	CO1	Demonstrate RBCs in vertebrates;	CO5											
	CO2	Effect of body size on oxygen consumption;	Average	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00
	CO3	Determine bleeding and clotting time in vertebrates;												
	CO4	Determine heartbeat of crab.												
	CO5													

Academic Year :	2018-19
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Class		M. Sc -II	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50302			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Entomology-I(4C)		CO1	3	3	3	2	2	3	3	2	2	2	3
Semester No	3		CO2	3	2	2	1	2	2	2	2	2	1	2
Teacher Name	Dr. Rahul Gaikwad		CO3	2	2	3	1	1	2	2	2	2	1	2
Course Outcomes			CO4	3	2	3	1	1	2	1	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	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	2.00	2.00	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												

Class		M. Sc -II	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50304			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Immunology(2C)		CO1	3	3	3	2	2	3	2	3	3	3	3
Semester No	3		CO2	2	3	2	3	2	3	2	2	2	2	2
Teacher Name	Dr. Ivan Aranha		CO3	3	3	2	3	2	3	2	3	2	2	2
Course Outcomes			CO4	3	3	2	3	2	3	2	3	2	2	2
	CO1	Introduction to Immunology	CO5	3	2	2	3	2	3	2	2	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	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	PSO1	PSO2	PSO3
Subject Name	Insect Physiology and Biochemistry(2C)		CO1	1	1	0	2	1	0	0	1	1	1	1
Semester No	3		CO2	1	1	0	1	1	0	0	1	1	1	1
Teacher Name	Dr Pande G S		CO3	1	1	0	1	1	0	0	1	1	1	1
Course Outcomes			CO4	1	1	0	1	1	0	0	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
	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
	CO3	Demonstrate the process of excretion, detoxification and water balance.												
	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	PSO1	PSO2	PSO3
Subject Name	Parasitology(2C)		CO1	3	2	1	2	2	3	1	2	2	3	1
Semester No	3		CO2	2	2	3	1	2	2	2	1	3	2	2
Teacher Name	Mr. D. G. Bhalsing		CO3	2	1	2	3	1	3	2	3	2	3	3
Course Outcomes			CO4	2	3	1	2	3	2	3	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	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	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	PSO1	PSO2	PSO3

Subject Name	Fundamentals of Systematics (2C)		CO1	0	0	0	1	0	0	1	0	1	1	1
Semester No	3		CO2	1	1	0	0	2	0	2	0	1	1	1
Teacher Name	Dr. Pande G S		CO3	0	0	0	1	0	0	1	0	1	1	1
Course Outcomes			CO4	1	1	0	0	2	0	2	0	1	1	1
	CO1	Explain principles, methods of biological classification and Animal diversity. Explain the importance of taxonomic keys and taxonomic characters	CO5	0	0	0	1	0	0	1	0	1	1	1
	CO2	Explain the principles of classification and nomenclature	Average	0.40	0.40	0.00	0.60	0.80	0.00	1.40	0.00	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	PSO1	PSO2	PSO3
Subject Name	Insect Ecology (2C)		CO1	1	1	1	1	1	1	0	1	1	1	1
Semester No	3		CO2	1	1	1	1	1	1	0	1	1	1	1
Teacher Name	Dr. Avinash Vanjare		CO3	1	1	1	1	1	1	0	1	1	1	1
Course Outcomes			CO4	1	1	1	1	1	1	0	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
	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
	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	PSO1	PSO2	PSO3
Subject Name	Practicals in Entomology -I(3C)		CO1	3	2	2	3	3	2	2	3	3	3	3
Semester No	3		CO2	3	3	2	1	2	1	3	2	3	2	3
Teacher Name	Dr. Rahul Gaikwad		CO3	2	3	2	1	1	1	2	2	3	2	3

Course Outcomes			CO4	3	3	3	2	2	2	2	3	3	2	2
	CO1	Learning Method of collection, preservation & presentation of insects.	CO5	2	3	2	1	1	1	2	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	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.												

Class	M. Sc -II	Course Outcomes	Program Outcomes								PSOs			
Subject Code	50317		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
Subject Name	Practicals in Immunology (2C)	CO1	3	3	3	3	1	3	1	3	3	2	3	
Semester No	3	CO2	3	2	3	3	1	3	1	3	3	3	2	
Teacher Name	Dr. Ivan Aranha	CO3	3	2	3	3	1	3	1	3	2	2	2	
Course Outcomes		CO4	3	2	3	3	1	3	1	3	2	2	2	
	CO1	Ouchterlony technique to show antigen and antibody reaction	CO5	3	2	3	3	1	3	1	3	2	2	2
	CO2	Immunoelectrophoresis	Average	3.00	2.20	3.00	3.00	1.00	3.00	1.00	3.00	2.40	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	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	0	1
Teacher Name	Dr. GS Pande	CO3	1	1	1	2	2	1	1	1	1	0	1
Course Outcomes		CO4	1	1	1	2	2	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	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	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	PSO1	PSO2	PSO3
Subject Name	Practicals in Parasitology (2C)		CO1	2	1	3	2	2	3	3	2	3	2	1
Semester No	3		CO2	3	2	1	1	3	2	2	3	2	2	3
Teacher Name	Mr. D. G. Bhalsing		CO3	2	2	2	3	1	3	1	2	3	2	2
Course Outcomes			CO4	3	2	3	3	2	3	2	3	1	3	2
	CO1	Understand lifecycle, role as vector and control measures of common parasites.	CO5	2	3	2	2	3	1	3	2	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	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	PSO1	PSO2	PSO3
Subject Name	Practicals in Fundamentals of Systematics (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	0	1
Teacher Name	Dr. GS Pande		CO3	1	1	1	2	2	1	1	1	1	0	1
Course Outcomes			CO4	1	1	1	2	2	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	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	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 different 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	PSO1	PSO2	PSO3
Subject Name	Research Projects (2C)	CO1	1	1	1	2	1	1	1	1	1	1	1
Semester No	3	CO2	1	1	1	2	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
Course Outcomes		CO4	1	1	1	2	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
	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
	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	PSO1	PSO2	PSO3	
Subject Name	Entomology-II (4C)	CO1	3	3	3	2	2	3	1	3	3	2	2	
Semester No	4	CO2	2	2	2	2	2	1	1	2	2	0	2	
Teacher Name	Dr. Rahul Gaikwad	CO3	3	3	3	3	2	3	2	2	3	2	3	
Course Outcomes		CO4	2	2	2	2	2	1	1	3	2	0	2	
	CO1	Learning Gametogenesis, Fertilization and oviposition in insects.	CO5	3	3	3	3	2	3	2	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	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.

Class		M. Sc -II	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50404			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Economic Zoology (2C)		CO1	1	2	1	2	3	1	1	2	3	2	2
Semester No	4		CO2	2	1	2	3	2	3	3	3	2	3	2
Teacher Name	Dr. Balraj Khobragade		CO3	2	2	1	2	3	3	2	1	3	2	3
Course Outcomes			CO4	3	3	2	3	2	1	3	2	3	2	3
	CO1	Knowledge of parasitic protozoans and helminths.	CO5	1	3	3	1	3	2	3	3	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	2.60	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	PSO1	PSO2	PSO3
Subject Name	Mammalian Repreoductive Physiology (2C)		CO1	3	3	3	3	1	3	1	3	3	1	1
Semester No	4		CO2	3	3	3	3	1	3	1	3	3	1	1
Teacher Name	Dr. Ivan Aranha		CO3	3	3	3	3	1	3	1	3	3	1	1
Course Outcomes			CO4	3	3	3	3	1	3	1	3	3	1	1
	CO1	Introduction to Reproductive organ	CO5	3	3	3	3	1	3	1	3	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	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	Program Outcomes								PSOs		
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Subject Code	50409	Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Pollution Biology(2C)	CO1	1	1	1	1	0	1	1	1	1	1	1
Semester No	4	CO2	1	1	1	1	0	1	1	1	1	1	1
Teacher Name	Dr. Avinash Vanjare	CO3	1	1	1	1	0	1	1	1	1	1	1
Course Outcomes		CO4	1	1	1	1	0	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
	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
	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	PSO1	PSO2	PSO3		
Subject Name	Apiculture(2C)	CO1	2	3	1	2	2	3	1	2	2	3	1	
Semester No	4	CO2	3	2	2	3	3	2	3	3	2	2	2	
Teacher Name	Mr. D. G. Bhalsing	CO3	2	1	3	2	2	3	2	1	2	2	1	
Course Outcomes		CO4	1	3	2	1	2	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	2	2	3	3	1	1	3	1	3	3	
	CO2	Understand beekeeping as an occupation.	Average	2.00	2.20	2.20	2.20	2.00	2.40	2.20	1.80	2.40	2.00	2.00
	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	PSO1	PSO2	PSO3	
Subject Name	Practicals in Entomology- II(3C)	CO1	2	2	2	2	1	1	2	2	2	2	2
Semester No	4	CO2	3	3	3	3	2	2	2	2	2	2	2
Teacher Name	Dr. Rahul Gaikwad	CO3	3	3	2	3	2	2	2	3	2	2	2
Course Outcomes		CO4	2	3	3	3	1	2	2	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	2	2

	CO2	Studying the eggs of different insects.	Average	2.60	2.60	2.40	2.60	1.40	1.60	2.00	2.40	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.												

Class		M. Sc -II	Course Outcomes	Program Outcomes								PSOs		
Subject Code	50416			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
Subject Name	Practicals in Economic Zoology(2C)		CO1	3	2	3	3	1	3	2	1	3	2	1
Semester No	4		CO2	2	3	2	3	2	2	2	3	2	2	3
Teacher Name	Dr. Balraj Khobragade		CO3	3	2	1	3	3	2	3	2	3	2	3
Course Outcomes			CO4	2	2	3	2	3	3	2	3	1	3	2
	CO1	Understand various apiculture equipment.	CO5	2	3	3	2	3	1	3	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	2.20	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	PSO1	PSO2	PSO3
Subject Name	Practicals in Mammalian Repreoductive Physiology (2C)		CO1	3	2	2	3	1	3	1	3	3	2	1
Semester No	4		CO2	3	2	2	3	1	3	1	3	3	1	2
Teacher Name	Dr. Ivan Aranha		CO3	3	2	2	3	1	3	1	3	3	1	1
Course Outcomes			CO4	3	2	2	3	1	3	1	3	3	2	2
	CO1	Studying anatomy of male and female reproductive system	CO5	3	2	2	3	1	3	1	3	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	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	PSO1	PSO2	PSO3

Subject Name	Practicals in Pollution Biology (2C)	CO1	1	1	1	1	1	1	0	1	1	1	1
Semester No	4	CO2	1	1	1	1	1	1	1	1	1	1	1
Teacher Name		CO3	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
CO1	Study of bioindicators of pollution. Analysis of CO, CO2, NO pollution	CO5	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
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	PSO1	PSO2	PSO3
Subject Name	Practicals in Apiculture (2C)	CO1	2	3	2	1	3	2	2	3	3	2	1
Semester No	4	CO2	2	2	3	2	3	2	1	2	1	3	2
Teacher Name	Mr. D. G. Bhalsing	CO3	3	2	1	3	2	3	2	2	3	2	2
Course Outcomes		CO4	1	2	3	2	2	2	3	1	1	2	3
CO1	Knowledge of honeybee species, castes and beemorphology.	CO5	2	3	2	2	1	1	2	3	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	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	PSO1	PSO2	PSO3
Subject Name	Research Project (2C)	CO1	1	1	1	2	1	1	1	1	1	1	1
Semester No	4	CO2	1	1	1	2	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
Course Outcomes		CO4	1	1	1	2	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
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
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	
		1	50101	2.80	3.00	1.60	1.80	0.60	2.80	1.40	2.80
		2	50102	1.80	1.80	1.80	2.00	1.60	1.80	1.80	2.00
		3	50103	3.00	2.60	1.40	1.80	1.20	2.40	1.60	2.40
		4	50104	1.00	2.00	2.20	1.40	1.00	2.60	1.40	1.80
		5	50105	2.00	2.00	2.40	2.00	2.40	2.20	2.00	2.40
		6	50106	2.00	1.20	2.20	1.00	2.00	2.40	2.40	1.80
		7	50107	1.00	2.40	2.40	3.00	1.00	2.60	1.00	3.00
		8	50108	1.80	1.80	1.60	2.00	2.00	1.80	1.80	1.60
		9	50109	2.00	3.00	1.80	1.80	1.20	2.60	2.40	2.60
		10	50111	2.40	2.00	2.20	2.40	2.20	2.20	2.00	2.20
		11	50112	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		12	50201	2.40	2.40	1.60	1.40	1.00	2.60	1.60	3.00
		13	50202	2.80	2.60	2.40	2.20	1.20	2.40	1.40	2.20
		14	50203	2.40	2.20	2.20	1.60	1.20	2.00	1.20	2.60
		15	50204	2.20	2.20	1.80	2.40	2.20	2.20	2.40	2.40
		16	50205	1.00	0.20	0.80	1.00	0.20	1.00	0.40	1.00
		17	50206	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
		18	50207	3.00	3.00	3.00	3.00	2.60	2.40	1.80	3.00
		19	50208	3.00	3.00	2.80	2.80	2.40	2.80	1.40	3.00
		20	50209	2.20	3.00	3.00	2.60	1.20	2.60	1.00	2.80
		21	50210	2.20	2.00	2.60	2.00	2.60	2.20	2.40	2.20
FY	FY	22	50211	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00
		1	50302	2.60	2.20	2.60	1.20	1.40	2.20	2.00	2.00
		2	50304	2.80	2.80	2.20	2.80	2.00	3.00	2.00	2.60
		3	50308	1.00	1.00	0.00	1.20	1.00	0.00	0.00	1.00
		4	50310	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.00
		5	50311	0.40	0.40	0.00	0.60	0.80	0.00	1.40	0.00
		6	50312	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
		7	50315	2.60	2.80	2.20	1.60	1.80	1.40	2.20	2.40
		8	50317	3.00	2.20	3.00	3.00	1.00	3.00	1.00	3.00
		9	50321	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
		10	50323	2.40	2.00	2.20	2.20	2.20	2.40	2.20	2.40
		11	50324	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
SY		12	50325	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00
		13	50402	2.60	2.60	2.60	2.40	2.00	2.20	1.40	2.40
		14	50404	1.80	2.20	1.80	2.20	2.60	2.00	2.40	2.20
		15	50406	3.00	3.00	3.00	3.00	1.00	3.00	1.00	3.00
		16	50409	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
		17	50410	2.00	2.20	2.20	2.20	2.00	2.40	2.20	1.80

		18	50414	2.60	2.60	2.40	2.60	1.40	1.60	2.00	2.40
		19	50416	2.40	2.40	2.40	2.60	2.40	2.20	2.40	2.20
		20	50418	3.00	2.00	2.00	3.00	1.00	3.00	1.00	3.00
		21	50421	1.00	1.00	1.00	1.00	1.00	1.00	0.80	1.00
		22	50422	2.00	2.40	2.20	2.00	2.20	2.00	2.00	2.20
	SY	23	50423	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
1.904	2.04	1.088	1.224	0.408	1.904	0.952	1.904
1.032	1.032	1.032	1.14666667	0.917333	1.032	1.032	1.146667
2.52	2.184	1.176	1.512	1.008	2.016	1.344	2.016
0.733333	1.466667	1.613333	1.02666667	0.733333	1.906667	1.026667	1.32
1.146667	1.146667	1.376	1.14666667	1.376	1.261333	1.146667	1.376
1.36	0.816	1.496	0.68	1.36	1.632	1.632	1.224
0.84	2.016	2.016	2.52	0.84	2.184	0.84	2.52
1.512	1.512	1.344	1.68	1.68	1.512	1.512	1.344
1.466667	2.2	1.32	1.32	0.88	1.906667	1.76	1.906667
1.76	1.466667	1.613333	1.76	1.613333	1.613333	1.466667	1.613333
0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
2.016	2.016	1.344	1.176	0.84	2.184	1.344	2.52
1.605333	1.490667	1.376	1.261333333	0.688	1.376	0.802667	1.261333
1.76	1.613333	1.613333	1.173333333	0.88	1.466667	0.88	1.906667
1.261333	1.261333	1.032	1.376	1.261333	1.261333	1.376	1.376
0.573333	0.114667	0.458667	0.573333333	0.114667	0.573333	0.229333	0.573333
0.733333	0.733333	0.733333	0.733333333	0	0.733333	0.733333	0.733333
2.52	2.52	2.52	2.52	2.184	2.016	1.512	2.52
2.52	2.52	2.352	2.352	2.016	2.352	1.176	2.52
2.2	3	3	2.6	1.2	2.6	1	2.8
1.965333	1.786667	2.322667	1.78666667	2.322667	1.965333	2.144	1.965333
0	0	0	0	1	0	1	1
2.184	1.848	2.184	1.008	1.176	1.848	1.68	1.68
2.352	2.352	1.848	2.352	1.68	2.52	1.68	2.184
0.84	0.84	0	1.008	0.84	0	0	0.84
1.68	1.68	1.68	1.68	1.848	1.848	1.848	1.68
0.272	0.272	0	0.408	0.544	0	0.952	0
0.84	0.84	0.84	0.84	0.84	0.84	0	0.84
2.6	2.8	2.2	1.6	1.8	1.4	2.2	2.4
3	2.2	3	3	1	3	1	3
1	1	1	2	2	1	1	1
2.4	2	2.2	2.2	2.2	2.4	2.2	2.4
1	1	1	2	2	1	1	1
1	1	1	2	1	1	1	1
2.184	2.184	2.184	2.016	1.68	1.848	1.176	2.016
1.512	1.848	1.512	1.848	2.184	1.68	2.016	1.848
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	0.84	0.84	0.84

1.466667	1.613333	1.613333	1.613333333	1.466667	1.76	1.613333	1.32
2.6	2.6	2.4	2.6	1.4	1.6	2	2.4
2.4	2.4	2.4	2.6	2.4	2.2	2.4	2.2
3	2	2	3	1	3	1	3
1	1	1	1	1	1	0.8	1
2	2.4	2.2	2	2.2	2	2	2.2
1	1	1	2	1	1	1	1

Percentage CO-PO ATTAINMENT

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

73.33333	73.33333	73.33333	73.33333333	73.33333	73.33333	73.33333	73.33333
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
	1 50101	2.60	1.40	2.60
	2 50102	1.60	2.00	2.00
	3 50103	2.20	1.20	2.20
	4 50104	2.00	1.60	2.60
	5 50105	2.20	2.00	2.20
	6 50106	2.40	2.40	2.40
	7 50107	2.00	1.00	2.80
	8 50108	1.60	1.80	1.80
	9 50109	1.60	1.20	2.60
	10 50111	2.40	2.00	2.00
	11 50112	1.00	1.00	1.00
	12 50201	2.00	1.00	3.00
	13 50202	2.20	1.20	2.40
	14 50203	2.20	1.20	2.20
	15 50204	2.00	2.20	2.00
	16 50205	0.75	1.00	1.00
	17 50206	1.00	1.00	1.00
	18 50207	3.00	0.40	3.00
	19 50208	3.00	1.40	3.00
	20 50209	2.40	1.20	2.60
	21 50210	2.40	2.20	2.20
FY	22 50211	1.00	0.00	1.00
	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	2.40	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

Course	PSO1	PSO2	PSO3
50101	1.768	0.952	1.768
50102	0.917333	1.146667	1.146667
50103	1.848	1.008	1.848
50104	1.466667	1.173333	1.906667
50105	1.261333	1.146667	1.261333
50106	1.632	1.632	1.632
50107	1.68	0.84	2.352
50108	1.344	1.512	1.512
50109	1.173333	0.88	1.906667
50111	1.76	1.466667	1.466667
50112	0.84	0.84	0.84
50201	1.68	0.84	2.52
50202	1.261333	0.688	1.376
50203	1.613333	0.88	1.613333
50204	1.146667	1.261333	1.146667
50205	0.43	0.573333	0.573333
50206	0.733333	0.733333	0.733333
50207	2.52	0.336	2.52
50208	2.52	1.176	2.52
50209	2.4	1.2	2.6
50210	2.144	1.965333	1.965333
50211	1	0	1
50302	1.68	1.008	1.848
50304	1.848	1.848	1.848
50308	0.84	0.84	0.84
50310	1.68	1.848	1.848
50311	0.68	0.68	0.68
50312	0.84	0.84	0.84
50315	3	2.2	2.6
50317	2.4	2.2	2.2
50321	1	0	1
50323	2.4	2	2
50324	1	0	1
50325	1	1	1
50402	2.016	0.84	2.016
50404	2.184	1.848	2.184
50406	2.52	0.84	0.84
50409	0.84	0.84	0.84

Course	PSO1	PSO2	PSO3
50101	68	68	68
50102	57.33333	57.33333	57.33333
50103	84	84	84
50104	73.33333	73.33333	73.33333
50105	57.33333	57.33333	57.33333
50106	68	68	68
50107	84	84	84
50108	84	84	84
50109	73.33333	73.33333	73.33333
50111	73.33333	73.33333	73.33333
50112	84	84	84
50201	84	84	84
50202	57.33333	57.33333	57.33333
50203	73.33333	73.33333	73.33333
50204	57.33333	57.33333	57.33333
50205	57.33333	57.33333	57.33333
50206	73.33333	73.33333	73.33333
50207	84	84	84
50208	84	84	84
50209	100	100	100
50210	89.33333	89.33333	89.33333
50211	100	#DIV/0!	100
50302	84	84	84
50304	84	84	84
50308	84	84	84
50310	84	84	84
50311	68	68	68
50312	84	84	84
50315	100	100	100
50317	100	100	100
50321	100	#DIV/0!	100
50323	100	100	100
50324	100	#DIV/0!	100
50325	100	100	100
50402	84	84	84
50404	84	84	84
50406	84	84	84
50409	84	84	84

SY	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

50410	1.76	1.466667	1.466667
50414	2	2.2	2.2
50416	2.2	2	2.4
50418	3	1.4	1.4
50421	1	1	1
50422	2.2	2.4	2
50423	1	1	1

50410	73.33333	73.33333	73.33333
50414	100	100	100
50416	100	100	100
50418	100	100	100
50421	100	100	100
50422	100	100	100
50423	100	100	100