

**Academic Year 2018-19**

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

<b>Department Name</b>	<b>Biochemistry</b>
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<b>Program Name</b>	<b>M.Sc.</b>
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<b>Program Outcomes(PO)</b>
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<b>PO1</b>	Learn the terms, theories, assumptions, methods, principles, theorem statements and classification
<b>PO2</b>	Fix out the problem and resolve it using theories and practical knowledge.
<b>PO3</b>	Inculcate knowledge for carrying projects and advanced research related skills.
<b>PO4</b>	Actively participate in team on case studies and field-based situations.
<b>PO5</b>	Analyze and interpret ideas, evidences and experiences with learned scientific reasoning
<b>PO6</b>	Aware and implement the subject facts that can be applied for the personal and social development
<b>PO7</b>	Use digital literacy to retrieve and evaluate subject related information
<b>PO8</b>	Get moral and ethical values for society as well as in research
<b>PO9</b>	Give analytical reasoning to interpret research data
<b>PO10</b>	Improve their managerial skills and abilities in subject related activities.
<b>PO11</b>	Inculcate continuous learning habit through all available resources.
<b>PO12</b>	Participate in multicultural society and communicate the subject knowledge for the betterment of society

<b>Program Specific Outcome(PSO)</b>
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<b>PSO1</b>	Demonstrate a comprehensive knowledge of all disciplines.
<b>PSO2</b>	To assess and evaluate facts, claims and arguments using their scientific knowledge
<b>PSO3</b>	To define a problem, analyse, interpret and draw conclusion by planning, implementing and reporting the results of an experiment.

<b>Academic Year : 2018-19</b>
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Class		M.Sc. Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-170			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Biomolecules		CO1	3	2	3	2	1	2	3	1	1	2	3	2	3	3	2
Semester No	I		CO2	3	2	3	2	1	2	2	1	1	1	3	2	3	2	2
Teacher Name	Dr. S.J. Suryavanshi and Dr. Pawanjeet Vaddadi		CO3	3	2	3	3	3	3	3	3	2	0	3	3	3	2	2
Course Outcomes			CO4	3	2	3	3	3	3	3	3	2	0	3	3	2	2	2
	CO1	Students should be able to get the knowledge about structure & function of biomolecules	CO5	3	1	2	2	2	2	2	1	1	0	2	1	2	0	1
	CO2	How the biomolecules work, interact & their importance in all living systems	Average	3.00	1.80	2.80	2.40	2.00	2.40	2.60	1.80	1.40	0.60	2.80	2.20	2.60	1.80	1.80
	CO3	How to prevent & deal with vitamin deficiency diseases																
	CO4	To learn about the classification and physicochemical characteristics of amino acids and proteins																
	CO5	To provide basic concepts of the structural organization of proteins.																

Class		M.Sc. Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-171			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Enzymology and Biophysical Techniques		CO1	3	3	3	3	2	3	3	3	3	3	3	3	3	3	
Semester No	I		CO2	3	3	3	1	2	2	2	2	3	2	3	2	2	2	
Teacher Name	Dr. Pawanjeet Vaddadi		CO3	3	3	2	2	1	1	1	2	2	2	3	1	1	2	
Course Outcomes			CO4	3	3	2	2	2	1	2	0	2	1	2	1	1	2	
	CO1	The course will provide fundamental knowledge of enzymes their classification and importance in biological reactions.	CO5	3	2	0	0	0	0	0	0	1	0	0	0	2	1	

	CO2	Students will understand the difference between a chemical catalyst and biocatalyst , understand activation energy and how enzyme works?	Average	3.00	2.80	2.00	1.60	1.40	1.40	1.60	1.40	2.20	1.60	2.20	1.40	1.40	2.20	1.80
	CO3	To know about kinetics of the enzymatic reactions and enzyme inhibition																
	CO4	Student will get acquainted with methodology and biological applications for the characterization of different biomolecules.																
	CO5	The student will learn the principles and working of sophisticated techniques and equipments used in biochemistry																

Class		M.Sc. Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH -172			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Microbiology and Cell Biology		CO1	3	2	3	3	2	2	3	2	1	2	3	2	3	2	3
Semester No	I		CO2	3	1	3	2	2	2	2	2	2	3	2	3	2	2	
Teacher Name	Dr Sunny D Rupwate and Mr. NS Gaikwad		CO3	3	2	2	2	2	1	2	2	1	2	2	1	2	1	2
Course Outcomes			CO4	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1
	CO1	Gain a deeper understanding of the various biological processes that occur at various cellular membranes.	CO5	3	1	1	0	0	0	0	0	0	1	0	2	1	1	
	CO2	Acquire a deeper knowledge on how the structures and properties of membranes are defined and regulated by their lipid, protein and carbohydrate constituents.	Average	3.00	1.60	2.20	1.80	1.40	1.20	1.60	1.40	1.00	1.40	2.00	1.20	2.20	1.40	1.80
	CO3	Develop your presentation, presentation-making, and discussion skills.																
	CO4	Student will learn cell organelles and their function																
	CO5	Student will learn techniques and principles involved in microbiology																

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-167			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Analytical Biochemistry practical		CO1	3	3	3	3	3	3	3	3	2	3	2	3	2	3	

Semester No	I	CO2	3	2	3	1	3	2	2	2	2	2	2	2	2	2	2	
Teacher Name	Dr. S.J. Suryavanshi and Dr. Pawanjeet Vaddadi	CO3	3	1	3	2	2	2	2	1	2	1	2	1	2	1	2	
Course Outcomes		CO4	3	2	2	1	2	1	1	2	1	1	1	1	2	1	2	
	CO1	The student will acquire the laboratory skills, handling biochemical equipments	CO5	2	1	2	1	1	1	2	1	1	1	1	0	1	1	
	CO2	Students will be able to plan various experiments	Average	2.80	1.80	2.60	1.60	2.20	1.80	2.00	1.80	1.80	1.40	1.80	1.20	2.00	1.40	2.00
	CO3	These will help them in their research projects																
	CO4	Qualitatively and quantitatively analyse different Biomolecules such as proteins, amino acids etc																
	CO5	Student will be exposed to the chemical principle of specific reactions of Carbohydrates.																

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs			
Subject Code	BCH-168		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Physical Biochemistry Practical	CO1	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	
Semester No	I	CO2	3	2	3	3	2	2	2	2	2	2	2	2	2	2	2	
Teacher Name	Dr. Pawanjeet Vaddadi	CO3	2	2	2	2	2	2	3	3	2	2	2	2	3	2	2	
Course Outcomes		CO4	2	2	2	2	2	2	2	2	1	2	2	1	2	2	2	
	CO1	The students will gain experimental training for preparation of solutions and different buffers	CO5	1	1	1	2	2	2	2	1	2	2	2	2	2	3	
	CO2	The students should obtain hands-on training in basic separation techniques in biochemistry like chromatography, electrophoresis, etc.	Average	2.20	1.80	2.20	2.40	2.20	2.20	2.40	2.00	2.20	2.20	2.00	2.20	2.40	2.20	2.40
	CO3	Learn analysis of amino acid sequences																
	CO4	Learn Analysis of DNA sequences																
	CO5	Learn Handling of atomic co-ordinates files																

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-267		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Microbiology and Enzymology	CO1	3	2	3	3	3	2	3	2	1	2	3	2	3	2	2

Semester No	II	CO2	3	2	3	2	2	2	3	2	2	2	3	2	3	2	2
Teacher Name	Dr Rajesh D Tak and Mr. NS Gaikwad	CO3	3	2	1	2	2	1	2	2	2	1	0	2	2	2	0
Course Outcomes		CO4	2	2	2	1	2	1	1	0	1	1	2	2	2	2	2
CO1	Student will learn techniques and principles involved in microbiology	CO5	2	1	0	0	1	0	1	1	0	0	2	1	1	1	1
CO2	These will help them in their research projects	Average	2.60	1.80	1.80	1.60	2.00	1.20	2.00	1.40	1.20	1.20	2.00	1.80	2.20	1.80	1.40
CO3	Students will understand the difference between a chemical catalyst and biocatalyst , understand activation energy and how enzyme works?																
CO4	To know about kinetics of the enzymatic reactions and enzyme inhibition																
CO5																	

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-270		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Bioenergetics and Metabolism	CO1	3	2	3	3	2	2	3	2	3	2	3	2	3	2	2
Semester No	II	CO2	3	2	3	2	2	3	3	2	2	2	3	2	3	2	2
Teacher Name	Dr. S.J. Suryavanshi and Dr. Pawanjeet Vaddadi	CO3	3	2	2	2	1	1	3	2	2	0	2	2	2	0	2
Course Outcomes		CO4	3	2	2	2	1	1	2	2	1	1	2	1	2	2	0
CO1	Students should understand the basic concepts of bioenergetics.	CO5	2	0	1	1	1	0	2	0	0	1	0	0	0	1	1
CO2	Their influence on biochemical processes.	Average	2.80	1.60	2.20	2.00	1.40	1.40	2.60	1.60	1.60	1.20	2.00	1.40	2.00	1.40	1.40
CO3	How metabolism transforms the matter of macronutrients into substances a cell can use																
CO4	They will acquire knowledge related to anabolic and catabolic pathways of carbohydrates																
CO5	Diseases caused due to abnormalities in these pathways.																

Class	M. Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-271		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

Subject Name	Techniques in characterization of biomolecules	CO1	3	2	3	3	2	2	3	2	1	2	3	2	3	2	2	
Semester No	II	CO2	3	1	3	2	2	2	3	2	2	2	3	2	3	2	2	
Teacher Name	Dr. Pawanjeet Vaddadi and Dr Rajesh D Tak	CO3	2	2	2	3	2	2	2	3	3	2	3	3	3	3	2	
Course Outcomes		CO4	3	2	3	2	0	2	2	2	3	2	3	3	3	3	3	
	CO1	Practices the techniques of sedimentation and Spectroscopy	CO5	1	1	0	1	1	1	0	1	0	1	1	1	2	1	1
	CO2	Consider the significance of several biophysical methods.	Average	2.40	1.60	2.20	2.20	1.40	1.80	2.00	2.00	1.80	1.80	2.60	2.20	2.80	2.20	2.00
	CO3	Determine the physical principles that keep the fundamental cellular functions operating.																
	CO4	Students will get acquainted to spectroscopic methods and Mass Spectrometry																
	CO5																	

Class	M. Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs			
Subject Code	BCH-272		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	BIOSTATISTICS, COMPUTERS AND BIOINFORMATICS	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Semester No	II	CO2	3	3	3	1	2	2	2	2	3	2	3	2	2	2	2	
Teacher Name	Dr Sunny D Rupwate and Dr. Chandrashekhar	CO3	3	3	2	2	2	1	3	3	3	2	3	1	3	3	3	
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	CO1	Mastery the core concepts of Bioinformatics	CO5	0	1	1	1	1	0	0	1	1	0	1	1	1	1	1
	CO2	retrieval of information from biological databases	Average	2.40	2.60	2.40	2.00	2.20	1.80	2.20	2.40	2.60	2.00	2.60	2.00	2.40	2.40	2.40
	CO3	Use of Bioinformatic tools																
	CO4	To learn principles and practice of statistical methods in biological research																
	CO5																	

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-273		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Membrane Biochemistry and Genetics	CO1	3	2	3	3	2	2	3	2	1	2	3	2	3	2	3

Semester No	II	CO2	3	1	3	3	2	2	3	2	2	2	3	2	3	2	3	
Teacher Name	Dr. Pawanjeet Vaddadi and Mr. NS Gaikwad	CO3	2	2	3	2	2	1	3	3	3	2	2	3	2	3	2	
Course Outcomes		CO4	2	2	3	3	2	2	2	3	3	1	3	3	2	3	2	
	CO1	Gain a deeper understanding of the various biological processes that occur at various cellular membranes.	CO5	1	1	0	0	1	1	0	1	1	0	0	0	1	1	1
	CO2	Acquire a deeper knowledge on how the structures and properties of membranes are defined and regulated by their lipid, protein and carbohydrate constituents.	Average	2.20	1.60	2.40	2.20	1.80	1.60	2.20	2.20	2.00	1.40	2.20	2.00	2.20	2.20	2.20
	CO3	Develop your presentation, presentation-making, and discussion skills.																
	CO4	To understand the concept and principle of Molecules of Heredity																
	CO5																	

<b>Academic Year :</b>	<b>2018-19</b>
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Class		M.Sc. Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-370			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Molecular Biology		CO1	3	2	3	3	2	2	3	2	1	1	3	2	3	2	2
Semester No	III		CO2	3	2	2	2	2	2	2	2	2	1	3	1	3	2	2
Teacher Name	Dr. S. J. Suryavanshi		CO3	2	1	1	3	1	3	3	2	1	2	2	3	2	1	1
Course Outcomes			CO4	3	1	1	2	2	2	2	0	1	2	2	2	3	2	2
	CO1	Students will understand types of DNA & RNA	CO5	1	2	2	0	0	2	1	0	0	1	3	0	3	2	1
	CO2	Details of replication in prokaryotes & eukaryotes	Average	2.40	1.60	1.80	2.00	1.40	2.20	2.20	1.20	1.00	1.40	2.60	1.60	2.80	1.80	1.60
	CO3	How environmental factors & chemicals damage the DNA, Repair mechanisms present in the cells																
	CO4	How gene expression is regulated																
	CO5	Synthesis of proteins & their targeting to where they are required.																

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-371			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Medical Biochemistry and Immunology		CO1	3	3	2	2	3	2	3	3	2	2	3	2	3	2	2
Semester No	III		CO2	3	2	2	2	2	2	3	2	2	2	3	2	3	2	2
Teacher Name	Dr. Sunny D Rupwate and Dr. Pawanjeet Vaddadi		CO3	2	2	1	2	3	1	2	2	1	1	2	1	2	1	1
Course Outcomes			CO4	2	1	1	2	3	1	2	2	1	1	2	2	2	1	2
	CO1	Students will learn different drugs against bacterial, fungal, viral, parasitic infections, etc	CO5	1	0	0	0	2	2	1	3	0	1	3	0	1	2	0
	CO2	How these causative agents become resistant to different drugs	Average	2.20	1.60	1.20	1.60	2.60	1.60	2.20	2.40	1.20	1.40	2.60	1.40	2.20	1.60	1.40



CO3	Summarize diversity and the importance of humoral, cell-mediated and innate immune responses in combating pathogen
CO4	Acquire in-depth knowledge of Immunoglobulins and antigens
CO5	Gain the understanding of mechanisms involved in different types of hypersensitivity and complement system

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-372			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Neurochemistry and Biochemistry of specialized Tissues		CO1	3	3	3	3	3	3	3	2	3	2	2	3	3	3	3
Semester No	III		CO2	3	2	3	2	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	Dr Rajesh D Tak and Mr. NS Gaikwad		CO3	2	3	2	1	2	2	1	2	2	2	3	1	2	3	2
Course Outcomes			CO4	2	3	2	3	2	2	2	3	3	3	1	0	3	2	3
	CO1	Gain a comprehensive understanding of the relationship between brain function and behavior	CO5	3	1	1	1	0	3	1	1	0	1	1	1	2	1	1
	CO2	Investigate Receptor Function and Sensory Perception	Average	2.60	2.40	2.20	2.00	2.00	2.60	2.00	2.20	2.20	2.20	2.00	1.60	2.60	2.40	2.40
	CO3	Examine Learning and Memory Mechanisms																
	CO4	Investigate the biochemistry of muscle contraction and cell motility,																
	CO5	Examine the biochemistry of nerve conduction																

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-373			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Toxicology and Plant Biochemistry		CO1	3	3	3	2	2	1	3	2	3	2	3	3	2	3	
Semester No	III		CO2	3	3	3	2	2	1	3	2	3	2	3	3	2	3	
Teacher Name	Mr. NS Gaikwad and Dr Sunny D Rupwate		CO3	3	2	2	2	2	2	3	2	2	2	3	3	2	3	
Course Outcomes			CO4	2	2	1	1	1	2	2	1	1	1	1	1	1	2	

CO1	Students will acquire critical information and knowledge that can be used by regulatory agencies, decision makers, and others to put programs and policies in place to limit our exposures to toxic substances,	CO5	1	0	2	2	0	1	1	2	1	0	1	2	1	2	1
CO2	This will help students in acquiring information so that they can help in preventing or reducing the likelihood that a disease or other negative health outcome would occur due to toxic substances.	Average	2.40	2.00	2.20	1.80	1.40	1.40	2.40	1.80	2.00	1.40	2.20	2.40	2.20	1.80	2.40
CO3	By the end of this course, students should be able to explain the key biochemical processes involved in plant metabolism																
CO4	After completing this course, students should have the skills to collect, analyze, and interpret biochemical data related to plant systems.																
CO5	They should have a deep understanding of the chemical reactions, enzymes, and regulatory mechanisms that govern these processes including photosynthesis, respiration, and nitrogen fixation																

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-367			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Molecular Biology and Special Experiment Practical		CO1	3	3	2	3	3	3	3	3	2	3	1	3	2	3	
Semester No	III		CO2	3	3	2	3	3	1	3	3	2	3	1	3	2	2	
Teacher Name	Dr. Sunny D Rupwate and Dr. Pawanjeet Vaddadi		CO3	2	3	2	3	2	1	2	3	3	2	3	1	3	2	
Course Outcomes			CO4	2	1	3	1	1	3	3	1	2	3	3	3	2	3	
CO1	To get expertise in isolation of plasmids, cloning of gene and transformation into suitable bacteria for selection of recombinant clones.		CO5	1	2	0	2	1	1	2	1	0	2	1	1	1	1	
CO2	Student will learn about the technique like PCR		Average	2.20	2.40	1.80	2.40	2.00	1.80	2.60	2.20	2.20	2.20	2.60	1.40	2.40	2.00	
CO3	To acquire hands-on experience in chemical characterization/ identification of functional group of secondary metabolites using sophisticated analytical instruments																	

CO4	To acquire hands-on experience in plant tissue culture techniques
CO5	The expertise gained by the student from this practical experiments can be useful in Pharmaceutical and Biotech industries

Class		M.Sc. Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-368			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Clinical Biochemistry Practicals		CO1	3	3	2	3	2	3	2	2	3	3	3	2	3	3	2
Semester No	III		CO2	2	1	2	3	2	3	2	2	3	3	3	3	2	2	
Teacher Name	Dr. S. J. Suryavanshi		CO3	3	3	2	3	2	3	2	2	3	3	3	2	3	2	3
Course Outcomes			CO4	2	2	2	3	2	3	2	3	3	3	3	3	2	3	
	CO1	Students will understand to use their knowledge of biochemistry in pathology labs	CO5	2	2	2	3	2	3	2	3	3	3	3	3	2	3	
	CO2	They will know handling of blood, urine samples.	Average	2.40	2.20	2.00	3.00	2.00	3.00	2.00	2.40	3.00	3.00	3.00	2.60	3.00	2.20	2.60
	CO3	Checking particular parameters for a particular organ																
	CO4	Corelate with the normal levels																
	CO5	Come to the conclusion of a possible problem in that individual																

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-467			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Project		CO1	3	3	3	3	3	2	3	3	3	3	3	3	3	3	
Semester No	IV		CO2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	
Teacher Name	Dr. Pawanjeet Vaddadi ; Dr. S. J. Suryavanshi, Dr. R.D.Tak ; Dr. S.D. Rupwate; Mr. N S Gaikwad		CO3	3	1	1	2	1	1	2	2	3	3	3	3	3	3	
Course Outcomes			CO4	3	2	2	1	1	3	2	1	2	2	2	1	2	1	2
	CO1	Student will be able to choose an appropriate topic for the study and learn to manage obstacles more effectively	CO5	2	0	2	1	2	1	2	1	2	1	2	1	2	1	2
	CO2	For the selected research topic, student will be able to complete literature survey and frame hypothesis for the study	Average	2.60	1.80	2.20	2.00	2.00	2.00	2.40	2.00	2.60	2.40	2.60	2.20	2.60	2.20	2.60

	CO3	For the selected study, student will be able to compile relevant data, interpret and analyze it
	CO4	Student will be able to write a project report and will be able to defend his/her work in front of examiners
	CO5	Students can experience a boost in confidence in employment interviews as they complete thorough study of project topic

Class		M.Sc. Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-470			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Physiological Biochemistry and Endocrinology		CO1	3	3	3	2	2	1	3	2	3	2	3	3	3	2	3
Semester No	IV		CO2	3	3	3	2	2	1	3	2	3	2	3	3	2	3	
Teacher Name	Dr. Rajesh D Tak		CO3	2	2	2	2	2	2	2	2	2	3	3	3	2	3	
Course Outcomes			CO4	2	2	1	3	2	2	3	2	2	1	3	3	2	3	
	CO1	The subject will enlight students with the normal functions of living organisms and their parts.	CO5	3	1	1	1	1	1	3	1	1	1	3	2	3	1	1
	CO2	At the end students will acquire information about different tests for understanding the proper functioning of different body organs.	Average	2.60	2.20	2.00	2.00	1.80	1.40	2.80	1.80	2.20	1.60	3.00	2.80	3.00	1.80	2.60
	CO3	Students will acquire information about the physiology of man.																
	CO4	Students will be familiarized with basic pathophysiology, clinical manifestations, diagnostic strategies and treatment																
	CO5	Students will have deep exposure so that they can acquire information about disease prevention, and management of common diseases																

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-471			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Fermentation Technology and Tissue culture		CO1	3	2	3	2	2	2	3	2	2	1	2	2	2	2	2
Semester No	IV		CO2	3	2	2	2	2	2	3	2	2	1	2	2	3	2	2

Teacher Name		Mr. N S Gaikwad	CO3	2	1	2	1	1	2	2	3	1	2	3	2	3	3	1
Course Outcomes			CO4	2	2	1	2	1	1	2	2	1	2	2	1	2	2	2
	CO1	Students are exposed to information about the production of primary and derived metabolites from microorganisms.	CO5	2	2	1	0	0	1	2	0	0	0	2	1	1	1	1
	CO2	At the end students acquire knowlege about use of microorganisms and enzymes for production of compounds that have applications in the energy, material, pharmaceutical, chemical and food industries.	Average	2.40	1.80	1.80	1.40	1.20	1.60	2.40	1.80	1.20	1.20	2.20	1.60	2.20	2.00	1.60
	CO3	Students acquire knowledge about continuous production of active compounds including secondary metabolites and engineered molecules																
	CO4	Students are exposed to how tissue culture is used to develop thousands of genetically identical plants from one single parent plant																
	CO5	At the end students understand about the production of vaccines, pharmaceutical drugs,development of useful viruses for use in vaccine production.																

Class		M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-472			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Genetic Engineering		CO1	3	2	2	2	3	2	3	2	2	2	3	2	3	2	2
Semester No	IV		CO2	3	2	2	2	3	2	3	2	2	2	3	2	3	2	2
Teacher Name	Dr. S. J. Suryavanshi		CO3	2	1	0	1	2	1	2	1	1	1	2	1	2	1	1
Course Outcomes			CO4	1	1	0	2	2	2	0	2	1	1	2	2	2	1	1
	CO1	Students will understand the need of manipulation of the genes in living systems	CO5	3	2	2	1	2	1	3	3	0	1	3	3	3	2	2
	CO2	Use of suitable vectors & markers for particular organism	Average	2.40	1.60	1.20	1.60	2.40	1.60	2.20	2.00	1.20	1.40	2.60	2.00	2.60	1.60	1.60
	CO3	How the genes as well as proteins can be modified																
	CO4	How the recombinants can be identified																
	CO5	Students will be able to use this info in medicine, agriculture fields etc																

Class		M.Sc Biochemistry	Course	Program Outcomes												PSOs		
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Subject Code	BCH-473		Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Clinical Nutrition and Food technology		CO1	3	3	3	2	2	1	3	2	3	2	3	2	3	2	3
Semester No	IV		CO2	3	3	3	2	2	1	2	2	3	2	3	2	3	2	3
Teacher Name	Dr Sunny D Rupwate		CO3	3	0	2	2	1	3	2	2	2	2	3	2	3	2	3
Course Outcomes			CO4	3	2	1	2	1	0	2	1	1	1	3	1	3	2	3
	CO1	By the end of this course, students should have a thorough understanding of the principles of nutritional science	CO5															
	CO2	Students should be proficient in assessing the nutritional needs of individuals	Average	3.00	2.00	2.25	2.00	1.50	1.25	2.25	1.75	2.25	1.75	3.00	1.75	3.00	2.00	3.00
	CO3	By the end of this course, students should have a comprehensive understanding of various food processing techniques, including preservation, packaging, thermal processing, and fermentation																
	CO4	They should understand the importance of hygiene, sanitation, and regulatory compliance in food manufacturing																

<b>CO-PO Mapping</b>
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		Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
FY	FY	1 BCH-170	3.00	1.80	2.80	2.40	2.00	2.40	2.60	1.80	1.40	0.60	2.80	2.20	
		2 BCH-270	3.00	2.80	2.00	1.60	1.40	1.40	1.60	1.40	2.20	1.60	2.20	1.40	
		3 BCH-167	3.00	1.60	2.20	1.80	1.40	1.20	1.60	1.40	1.40	1.00	1.40	2.00	1.20
		4 #REF!	2.80	1.80	2.60	1.60	2.20	1.80	2.00	1.80	1.80	1.40	1.80	1.20	
		5 BCH-171	2.20	1.80	2.20	2.40	2.20	2.20	2.40	2.00	2.20	2.20	2.20	2.00	2.20
		6 #REF!	2.60	1.80	1.80	1.60	2.00	1.20	2.00	1.40	1.20	1.20	1.20	2.00	1.80
		7 BCH-168	2.80	1.60	2.20	2.00	1.40	1.40	2.60	1.60	1.60	1.20	2.00	2.00	1.40
		8 BCH-271	2.40	1.60	2.20	2.20	1.40	1.80	2.00	2.00	1.80	1.80	2.60	2.60	2.20
		9 BCH-272	2.40	2.60	2.40	2.00	2.20	1.80	2.20	2.40	2.60	2.00	2.60	2.60	2.00
		10 BCH-273	2.20	1.60	2.40	2.20	1.80	1.60	2.20	2.20	2.20	2.00	1.40	2.20	2.00
SY	SY	1 BCH-370	2.40	1.60	1.80	2.00	1.40	2.20	2.20	1.20	1.00	1.40	2.60	1.60	
		2 BCH-472	2.20	1.60	1.20	1.60	2.60	1.60	2.20	2.40	1.20	1.40	2.60	1.40	
		3 BCH-368	2.60	2.40	2.20	2.00	2.00	2.60	2.00	2.20	2.20	2.20	2.00	1.60	
		4 BCH-371	2.40	2.20	2.00	3.00	2.00	3.00	2.00	2.40	3.00	3.00	3.00	3.00	2.60
		5 BCH-367	2.20	2.40	1.80	2.40	2.00	1.80	2.60	2.20	2.20	2.20	2.20	2.60	1.40
		6 BCH-467	2.60	1.80	2.20	2.00	2.00	2.00	2.40	2.00	2.60	2.40	2.60	2.60	2.20
		8 BCH-373	2.40	2.00	2.20	1.80	1.40	1.40	2.40	1.80	2.00	1.40	2.20	2.20	2.40
		9 BCH-473	3.00	2.00	2.25	2.00	1.50	1.25	2.25	1.75	2.25	1.75	3.00	3.00	1.75
		10 BCH-471	2.40	1.60	1.20	1.60	2.40	1.60	2.20	2.00	1.20	1.40	2.60	2.60	2.00
		11 BCH-471	2.60	2.20	2.00	2.00	1.80	1.40	2.80	1.80	2.20	1.60	3.00	3.00	2.80

**CO-PO ATTAINMENT**

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
3	1.8	2.8	2.4	2	2.4	2.6	1.8	1.4	0.6	2.8	2.2
3	2.8	2	1.6	1.4	1.4	1.6	1.4	2.2	1.6	2.2	1.4
3	1.6	2.2	1.8	1.4	1.2	1.6	1.4	1	1.4	2	1.2
2.8	1.8	2.6	1.6	2.2	1.8	2	1.8	1.8	1.4	1.8	1.2
2.2	1.8	2.2	2.4	2.2	2.2	2.4	2	2.2	2.2	2	2.2
2.6	1.8	1.8	1.6	2	1.2	2	1.4	1.2	1.2	2	1.8
2.8	1.6	2.2	2	1.4	1.4	2.6	1.6	1.6	1.2	2	1.4
2.4	1.6	2.2	2.2	1.4	1.8	2	2	1.8	1.8	2.6	2.2
2.4	2.6	2.4	2	2.2	1.8	2.2	2.4	2.6	2	2.6	2
2.2	1.6	2.4	2.2	1.8	1.6	2.2	2.2	2	1.4	2.2	2
2.4	1.6	1.8	2	1.4	2.2	2.2	1.2	1	1.4	2.6	1.6
2.2	1.6	1.2	1.6	2.6	1.6	2.2	2.4	1.2	1.4	2.6	1.4
2.6	2.4	2.2	2	2	2.6	2	2.2	2.2	2.2	2	1.6
2.4	2.2	2	3	2	3	2	2.4	3	3	3	2.6
2.2	2.4	1.8	2.4	2	1.8	2.6	2.2	2.2	2.2	2.6	1.4
2.6	1.8	2.2	2	2	2	2.4	2	2.6	2.4	2.6	2.2
2.4	2	2.2	1.8	1.4	1.4	2.4	1.8	2	1.4	2.2	2.4
3	2	2.25	2	1.5	1.25	2.25	1.75	2.25	1.75	3	1.75
2.4	1.6	1.2	1.6	2.4	1.6	2.2	2	1.2	1.4	2.6	2
2.6	2.2	2	2	1.8	1.4	2.8	1.8	2.2	1.6	3	2.8





FY  
SY

**CO-PSO MAPPING**

	Course	PSO1	PSO2	PSO3
1	BCH-170	2.60	1.80	1.80
2	BCH-270	1.40	2.20	1.80
3	BCH-167	2.20	1.40	1.80
4	BCH-167	2.00	1.40	2.00
5	BCH -172	2.40	2.20	2.40
6	BCH-167	2.20	1.80	1.40
7	BCH-168	2.00	1.40	1.40
8	BCH-271	2.80	2.20	2.00
9	BCH-272	2.40	2.40	2.40
10	BCH-273	2.20	2.20	2.20
11	BCH -172	2.40	2.40	2.40
1	BCH-370	2.80	1.80	1.60
2	BCH-472	2.20	1.60	1.40
3	BCH-368	2.60	2.40	2.40
4	BCH-371	3.00	2.20	2.60
5	BCH-367	2.40	2.00	2.20
7	BCH-471	2.40	2.40	2.40
8	BCH-373	2.20	1.80	2.40
9	BCH-473	3.00	2.00	3.00

**CO-PSO ATTAINMENT**

	Course	PSO1	PSO2	PSO3
	BCH-170	2.6	1.8	1.8
	BCH-270	1.4	2.2	1.8
	BCH-167	2.2	1.4	1.8
	#REF!	2	1.4	2
	BCH-171	2.4	2.2	2.4
	#REF!	2.2	1.8	1.4
	BCH-168	2	1.4	1.4
	BCH-271	2.8	2.2	2
	BCH-272	2.4	2.4	2.4
	BCH-273	2.2	2.2	2.2
	BCH -172	2.4	2.4	2.4
	BCH-370	2.8	1.8	1.6
	BCH-472	2.2	1.6	1.4
	BCH-368	2.6	2.4	2.4
	BCH-371	3	2.2	2.6
	BCH-367	2.4	2	2.2
	#REF!	2.4	2.4	2.4
	BCH-373	2.2	1.8	2.4
	BCH-473	3	2	3

**Percentage CO-PSO ATTAINMENT**

	Course	PSO1	PSO2	PSO3
	BCH-170	100	100	100
	BCH-270	100	100	100
	BCH-167	100	100	100
	#REF!	100	100	100
	BCH-171	100	100	100
	#REF!	100	100	100
	BCH-168	100	100	100
	BCH-271	100	100	100
	BCH-272	100	100	100
	BCH-273	100	100	100
	BCH -172	100	100	100
	BCH-370	100	100	100
	BCH-472	100	100	100
	BCH-368	100	100	100
	BCH-371	100	100	100
	BCH-367	100	100	100
	#REF!	100	100	100
	BCH-373	100	100	100
	BCH-473	100	100	100