Academic Year	2022-23

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

Department Name	Biochemistry

Program Name	M.Sc.

Program Outcomes(PO)

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

Program Specific Outcome(PSO)

PSO1	Demonstrate a comprehensive knowledge of all disciplines.
PSO2	To assess and evaluate facts, claims and arguments using their scientific knowledge
PSO3	To define a problem, analyse, interpret and draw conclusion by planning, implementing and reporting the results of an experiment.

Academic Year :	**2022-23**

Class	M.Sc. Biochemistry
Subject Code	BCH-111
Subject Name	Biomolecules I
Semester No	I
Teacher Name	Dr. S.J. Suryavanshi and Dr. Pawanjeet Vaddadi
Course Outcomes	
CO1	Students should be able to get the knowledge about structure & function of biomolecules
CO2	How the biomolecules work, interact & their importance in all living systems
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.

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2	1	2	3	1	1	2	3	2	3	3	2
CO2	3	2	3	2	1	2	2	1	1	1	3	2	3	2	2
CO3	3	2	3	3	3	3	3	3	2	0	3	3	3	2	2
CO4	3	2	3	3	3	3	3	3	2	0	3	3	2	2	2
CO5	3	1	2	2	2	2	2	1	1	0	2	1	2	2	2
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	2.20	2.00

Class	M.Sc Biochemistry
Subject Code	BCH-112
Subject Name	Physical Biochemistry
Semester No	I
Teacher Name	Dr. Rajesh D Tak
Course Outcomes	

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	2	3	2	3	2	3	2	3	2	2
CO2	2	3	3	2	2	2	3	2	2	2	3	2	2	2	2
CO3	3	2	2	2	1	2	2	3	2	2	3	1	2	1	1
CO4	2	2	2	1	1	1	2	2	1	1	2	2	1	1	2

	CO1	Students will gain proficiency in sedimentation theory, including the operation of preparatory and analytical ultracentrifuges	CO5	1	1	1	1	2	1	2	1	1	1	2	1	1	2	1
	CO2	Students will become skilled in molecular separation techniques, including membrane filtration using various filter materials like nitrocellulose, fiberglass, and polycarbonate filters	Average															
	CO3	Students will develop expertise in a wide range of chromatography techniques, including partition and adsorption chromatography																
	CO4	Understand the principles, instrumentation, methodology, and biological applications of various spectroscopic methods																
	CO5	Develop a solid understanding of the fundamental principles of mass spectrometry, including ionization, mass analyzers, and detectors																

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-113		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Cell Biology and Membrane Biochemistry	CO1	3	2	3	3	2	2	3	2	1	2	3	2	3	2	3
Semester No	I	CO2	3	1	3	3	2	2	3	2	2	2	3	2	3	2	3
Teacher Name	Dr. Pawanjeet Vaddadi; Dr. Sunny Rupwate	CO3	3	2	3	3	2	2	3	3	3	2	3	3	3	3	3
Course Outcomes		CO4	3	3	3	2	2	1	3	3	3	2	3	1	2	2	2
CO1	Gain a deeper understanding of the various biological processes that occur at various cellular membranes.	CO5	0	0	1	1	0	0	1		1	1	1	1	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	2.40	1.60	2.60	2.40	1.60	1.40	2.60	2.50	2.00	1.80	2.60	1.80	2.40	2.00	2.40

	CO3	Develop your presentation, presentation-making, and discussion skills.
	CO4	Student will learn cell organelles and their function
	CO5	

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes											PSOs		
Subject Code	BCH-114		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Enzymology	CO1	3	3	3	3	3	3	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	2
Teacher Name	Dr. Pawanjeet Vaddadi	CO3	3	3	2	2	2	1	3	3	3	2	3	1	3	3	3
Course Outcomes		CO4	3	3	3	2	2	1	3	3	3	2	3	1	2	2	2
CO1	The course will provide fundamental knowledge of enzymes their classification and importance in biological reactions.	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	Students will understand the difference between a chemical catalyst and biocatalyst , understand activation energy and how enzyme works?	Average	3.00	3.00	2.80	2.20	2.40	2.00	2.80	2.80	3.00	2.40	3.00	2.00	2.60	2.60	2.60
CO3	To know about kinetics of the enzymatic reactions and enzyme inhibition																
CO4	To study the enzyme regulation including allosteric enzymes – characteristics, models, examples and Multi - enzyme systems																
CO5	Students will be exposed to industrial and biomedical applications of enzymes.																

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes											PSOs		
Subject Code	BCH-114		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Enzymology Practical	CO1	3	3	3	3	3	3	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	2
Teacher Name	Dr. Rajesh D Tak	CO3	3	3	2	2	2	1	3	3	3	2	3	1	3	3	3
Course Outcomes		CO4	3	3	3	2	2	1	3	3	3	2	3	1	2	2	2

	CO1	Students will be able to isolate and detect different enzymes from biological sources	CO5	1	1	0	0	1	1	0	1	0	1	1	1	1	1	0
	CO2	Students will understand the difference between a chemical catalyst and biocatalyst , understand activation energy and how enzyme works?	Average	2.60	2.60	2.20	1.60	2.00	1.60	2.20	2.40	2.40	2.00	2.60	1.60	2.20	2.20	2.00
	CO3	To know about kinetics of the enzymatic reactions and enzyme inhibition																
	CO4	Students will be exposed to industrial and biomedical applications of enzymes.																
	CO5																	

Class	M.Sc. Biochemistry	Course Outcomes	Program Outcomes											PSOs		
Subject Code	BCH-115		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Analytical Biochemistry & Physical Biochemistry practicals	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	I	CO2	3	2	3	1	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	Dr. S.J. Suryavanshi and Dr. Pawanjeet Vaddadi	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO1	The student willl acquire the laboratory skills, handling biochemical equipments	CO5	1	1	1	0	1	0	1	1	1	1	1	1	0	0	1
	CO2	These will help them in their research projects	Average	2.60	2.40	2.60	2.00	2.60	2.40	2.60	2.60	2.60	2.60	2.60	2.60	2.40	2.40	2.60
	CO3	The students will gain experimental training for preparation of solutions and different buffers																
	CO4	The students should obtain hands-on training in basic separation techniques in biochemistry like chromatography, electrophoresis, etc.																
	CO5																	

Class	M.Sc. Biochemistry
Subject Code	BCH-211
Subject Name	Metabolism
Semester No	II
Teacher Name	Dr. Pawanjeet Vaddadi and Dr. S.J. Suryavanshi

Course Outcomes		
	CO1	Students should understand the basic concepts of bioenergetics.
	CO2	Their influence on biochemical processes.
	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.

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	3	2	2	3	2	1	2	3	2	3	2	2
CO2	3	1	3	3	2	2	3	2	2	2	3	2	3	2	2
CO3	3	2	3	3	2	2	3	3	3	2	3	3	3	3	2
CO4	3	2	3	3	2	2	3	3	3	2	3	3	3	3	3
CO5	3	2	3	3	2	2	3	3	3	2	3	3	3	3	3
Average	3.00	1.80	3.00	3.00	2.00	2.00	3.00	2.60	2.40	2.00	3.00	2.60	3.00	2.60	2.40

Class	M. Sc Biochemistry
Subject Code	BCH-212
Subject Name	Genetics
Semester No	II
Teacher Name	Mr. N.S. Gaikwad ; Dr. Pawanjeet Chhabda

Course Outcomes		
	CO1	Acquire knowledge on different types of mutation
	CO2	Understand the assumptions made in population models.
	CO3	The student will gain a basic understanding on human genetics and hereditary.

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	1	2	2	2	2	3	2	3	2	2	2	2
CO3	3	3	2	2	2	1	3	3	3	2	3	1	3	3	3
CO4	3	3	3	1	2	2	2	2	3	2	3	2	2	2	2
CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3.00	3.00	2.80	2.00	2.40	2.20	2.60	2.60	3.00	2.40	3.00	2.20	2.60	2.60	2.60

	CO4	To bring awareness to human society on various genetic disorders, its inheritance patterns and to develop the methods, and techniques of fighting against the diseases.
	CO5	To understand the concept and principle of Molecules of Heredity

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes											PSOs		
Subject Code	BCH-213		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Plant Biochemistry	CO1	3	3	3	2	2	1	3	2	3	2	3	3	3	2	3
Semester No	II	CO2	3	3	3	2	2	1	3	2	3	2	3	3	3	2	3
Teacher Name		CO3	3	2	2	2	2	2	3	2	2	2	3	3	3	2	3
Course Outcomes		CO4	2	2	0	1	1	2	1	1	2	2	1	1	1	1	1
CO1	By the end of this course, students should be able to explain the key biochemical processes involved in plant metabolism	CO5	1	1	2	1	1	0	o	1	1	0	1	1	1	1	1
CO2	After completing this course, students should have the skills to collect, analyze, and interpret biochemical data related to plant systems.	Average	2.40	2.20	2.00	1.60	1.60	1.20	2.50	1.60	2.20	1.60	2.20	2.20	2.20	1.60	2.20
CO3	They should have a deep understanding of the chemical reactions, enzymes, and regulatory mechanisms that govern these processes including photosynthesis, respiration, and nitrogen fixation																
CO4																	
CO5																	

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes											PSOs		
Subject Code	BCH-214 (T)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Microbiology Theroy	CO1	3	2	3	2	2	2	3	3	2	3	2	2	2	2	2
Semester No	II	CO2	3	2	3	2	2	2	3	2	2	2	2	2	2	2	2
Teacher Name	Mr. N.S. Gaikwad	CO3	2	2	3	1	1	1	3	2	1	2	1	2	2	1	1
Course Outcomes		CO4	2	1	2	1	1	1	2	1	1	1	1	1	1	2	1

	CO1	Students will classify microorganisms based on their characteristics and taxonomy
	CO2	Student will learn about microbial growth and cultivation methods
	CO3	Student will get well versed with microscopy techniques
	CO4	Students will study the structure, classification, and life cycles of viruses infecting bacteria, plants, and animals.
	CO5	Student will understand microbial diversity and classification

CO5	1	1	2	1	0	0	2	1	0	1	1	1	1	1	1
Average	2.20	1.60	2.60	1.40	1.20	1.20	2.60	1.80	1.20	1.80	1.40	1.60	1.60	1.60	1.40

Class	M.Sc Biochemistry
Subject Code	BCH-214 (P)
Subject Name	Microbiology Practical
Semester No	II
Teacher Name	Mr. N.S. Gaikwad

Course Outcomes

	CO1	Develop the skills to prepare various types of culture media required for microbial growth.
	CO2	Learn and practice microscopic techniques for observing microbial morphology, including motility, monochrome staining, and gram staining
	CO3	Master techniques for determining total viable counts of microorganisms
	CO4	Conduct microbial assays to determine the potency and effectiveness of antibiotics against specific microbial strains
	CO5	Understand the principles and applications of sterilization techniques, including steam sterilization, dry heat sterilization, and filtration

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	2	3	3	2	3	2	2	2	2	2
CO2	3	2	3	2	2	2	3	2	3	2	2	2	2	2	2
CO3	2	2	2	1	1	1	3	2	1	2	2	2	2	1	1
CO4	2	1	2	1	1	1	1	1	1	1	1	1	2	2	2
CO5	1	1	2	1	0	0	2	1	0	1	1	1	1	2	1
Average	1.00	1.00	2.00	1.00	0.00	0.00	2.00	1.00	0.00	1.00	1.00	1.00	1.00	2.00	1.00

Class	M.Sc Biochemistry
Subject Code	BCH-215

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

Subject Name		Analytical Biochemistry and Physical Biochemistry Practical	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. Pawanjeet Vaddadi and Dr. Sunny Rupwate	CO3	3	3	2	2	2	1	3	3	3	2	3	1	3	3	3
Course Outcomes			CO4	3	3	3	2	2	1	3	3	3	2	3	1	2	2	2
	CO1	The students will gain experimental training for preparation of solutions	CO5	1	1	0	0	1	1	0	1	1	0	0	1	1	0	1
	CO2	Qualitatively and quantitatively isolate different Biomolecules such as proteins,amino acids and lipids	Average	2.60	2.60	2.20	1.60	2.00	1.60	2.20	2.40	2.60	1.80	2.40	1.60	2.20	2.00	2.20
	CO3	Students will be able to determine the industrial value of a particular oil or fat depending upon its physical and chemical characteristics																
	CO4	Students will get handson training on techniques like chromatography and electrophoresis																
	CO5																	

Academic Year : 2022-23

Class	M.Sc. Biochemistry
Subject Code	BCH-311
Subject Name	Molecular Biology
Semester No	III
Teacher Name	Dr. S. J. Suryavanshi

Course Outcomes		
	CO1	Students will understand types of DNA & RNA
	CO2	Details of replication in prokaryotes & eukaryotes
	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.

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	3	2	2	3	2	1	1	3	2	3	2	2
CO2	3	2	2	3	2	2	3	2	2	1	3	2	3	2	2
CO3	3	2	2	3	2	3	3	2	2	1	3	3	3	2	2
CO4	3	2	2	3	2	2	3	0	2	1	3	2	3	2	2
CO5	3	2	2	3	2	2	3	0	2	1	3	2	3	2	2
Average	3.00	2.00	2.20	3.00	2.00	2.20	3.00	1.20	1.80	1.00	3.00	2.20	3.00	2.00	2.00

Class	M.Sc Biochemistry
Subject Code	BCH-312
Subject Name	Immunology
Semester No	III
Teacher Name	Dr. Pawanjeet Vaddadi

Course Outcomes		
	CO1	Students are acquainted with basic immunological concepts
	CO2	Summarize diversity and the importance of humoral, cell-mediated and innate immune responses in combating pathogen
	CO3	Acquire in-depth knowledge of Immunoglobulins and antigens

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	3	2	3	2	2	3	3	3	2	3	3	2
CO2	2	1	2	3	2	3	2	2	3	3	3	3	3	2	2
CO3	3	3	2	3	2	3	2	2	3	3	3	2	3	2	3
CO4	2	2	2	3	2	3	2	3	3	3	3	3	3	2	3
CO5	2	2	2	3	2	3	2	3	3	3	3	3	3	2	3
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

	CO4	Gain the understanding of mechanisms involved in different types of hypersensitivity and complement system
	CO5	Analyze importance of conventional vs. Recombinant vaccines

Class	M.Sc. Biochemistry
Subject Code	BCH-313
Subject Name	Recombinant DNA Technology
Semester No	III
Teacher Name	Dr. R.D.Tak ; Dr. S.D. Rupwate

Course Outcomes		
	CO1	Students will understand the need of manipulation of the genes in living systems
	CO2	Use of suitable vectors & markers for particular organism
	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

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	3	2	3	3	2	2	3	2	3	2	2
CO2	3	2	2	2	3	2	3	2	2	2	3	2	3	2	2
CO3	3	2	2	2	3	2	3	2	2	1	3	2	3	2	2
CO4	3	2	2	2	3	2	3	2	2	1	3	2	3	2	2
CO5	3	2	2	2	3	2	3	3	2	1	3	3	3	2	2
Average	3.00	2.00	2.00	2.00	3.00	2.00	3.00	2.40	2.00	1.40	3.00	2.20	3.00	2.00	2.00

Class	M.Sc Biochemistry
Subject Code	BCH-314
Subject Name	Bio-processing and Industrial Biochemistry
Semester No	III
Teacher Name	Mr. N.S.Gaikwad

Course Outcomes		
	CO1	Students are exposed to information about the production of primary and derived metabolites from microorganisms.
	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.

Course Outcomes	Program Outcomes												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	3	2	3	2	2	3	3	3	2	3	3	2
CO2	2	1	2	3	2	3	2	2	3	3	3	3	3	2	2
CO3	3	3	2	3	2	3	2	2	3	3	3	2	3	2	3
CO4	2	2	2	3	2	3	2	3	3	3	3	3	3	2	3
CO5	2	2	2	3	2	3	2	3	3	3	3	3	3	2	3
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	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-315		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Molecular Biology and Immunological techniques practical	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	III	CO2	3	3	3	3	3	2	3	3	3	3	3	3	3	3	1
Teacher Name	Dr. Sunny D Rupwate and Dr. Pawanjeet Vaddadi	CO3	2	3	2	2	2	2	2	3	2	2	1	3	3	3	3
Course Outcomes		CO4	3	3	3	3	3	2	1	2	2	2	1	2	3	1	3
	CO1	To get expertise in isolation of plasmids, cloning of gene and transformation into suitable bacteria for selection of recombinant clones.	CO5	3	1	1	2	1	1	1	2	3	2	0	3	3	3	3
	CO2	Student will learn about the technique like PCR	Average	2.80	2.60	2.40	2.60	2.40	2.00	2.00	2.60	2.60	2.40	1.60	2.80	3.00	2.60	2.60
	CO3	Studen will learn how to design primer and desiging cloning statergy															
	CO4	The student will demonstrate knowledge and practice of common immunological laboratory procedures used to detect and measure the immune response															
	CO5	Student will learn about the technique like lateral flow immunoassay															

Class	M.Sc Biochemistry	Course Outcomes	Program Outcomes											PSOs		
Subject Code	BCH-411		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Neurochemistry& Endocrinology	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	IV	CO2	3	3	3	3	3	2	3	3	3	3	3	3	3	3	1

Teacher Name	Dr Rajesh D Tak and Mr. N.S.Gaikwad
Course Outcomes	
CO1	Gain a comprehensive understanding of the relationship between brain function and behavior
CO2	Investigate Receptor Function and Sensory Perception
CO3	Examine Learning and Memory Mechanisms
CO4	Investigate the biochemistry of muscle contraction and cell motility,
CO5	Examine the biochemistry of nerve conduction

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO3	2	3	2	2	2	2	2	3	2	2	1	3	3	3	3
CO4	3	3	3	3	3	2	1	2	2	2	1	2	3	1	3
CO5	3	1	1	2	1	1	1	2	3	2	0	3	3	3	3
Average	2.80	2.60	2.40	2.60	2.40	2.00	2.00	2.60	2.60	2.40	1.60	2.80	3.00	2.60	2.60

Class	
Subject Code	BCH-412
Subject Name	Medical Biochemistry
Semester No	IV
Teacher Name	Dr. S. J. Suryavanshi
Course Outcomes	
CO1	Students will learn different drugs against bacterial, fungal, viral, parasitic infections, etc
CO2	How these causative agents become resistant to differnt drugs
CO3	How cancer develops, types etc
CO4	Study of sickle cell anemia, thalassemia, malaria
CO5	Diseases due to accumulation of abnormal proteins in brain

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	1	3	2	3	2	3	3	3	2	3
CO2	3	3	3	2	2	1	3	2	3	2	3	3	3	2	3
CO3	3	2	2	2	2	2	3	2	2	2	3	3	3	2	3
CO4	3	2	1	3	2	2	3	2	2	1	3	3	3	2	3
CO5	3	1	1	1	1	1	3	1	1	1	3	2	3	1	1
Average	3.00	2.20	2.00	2.00	1.80	1.40	3.00	1.80	2.20	1.60	3.00	2.80	3.00	1.80	2.60

Class	
Subject Code	BCH-413
Subject Name	Clinical Nutrition and Food Technology
Semester No	IV
Teacher Name	Dr. Sunny D Rupwate and Dr. Pawanjeet Vaddadi
Course Outcomes	
CO1	By the end of this course, students should have a thorough understanding of the principles of nutritional science

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	1	3	2	3	2	3	2	3	2	3
CO2	3	3	3	2	2	1	2	2	3	2	3	2	3	2	3
CO3	3	0	2	2	1	3	2	2	2	2	3	2	3	2	3
CO4	3	2	1	2	1	0	2	1	1	1	3	1	3	2	3
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																
	CO5																	

Class	M.Sc. Biochemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BCH-414		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Clinical Biochemistry and Research Methodology Practical	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	IV	CO2	3	2	3	2	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	Dr. S. J. Suryavanshi	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO1	Students will understand to use their knowledge of biochemistry in pathology labs	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	They will know handling of blood, urine samples.	Average	3.00	2.80	3.00	2.80	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	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-415		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Project	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	IV	CO2	3	3	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	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes		CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

	CO1	Student will be able to choose an appropriate topic for the study and learn to manage obstacles more effectively	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	For the selected research topic, student will be able to complete literature survey and frame hypothesis for the study	Average	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	CO3	For the selected study, student will be able to complile 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																

CO-PO Mapping

			Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		1	BCH-111	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-112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		3	BCH-113	2.40	1.60	2.60	2.40	1.60	1.40	2.60	2.50	2.00	1.80	2.60	1.80
		4	BCH-114	3.00	3.00	2.80	2.20	2.40	2.00	2.80	2.80	3.00	2.40	3.00	2.00
		5	BCH-114	2.60	2.60	2.20	1.60	2.00	1.60	2.20	2.40	2.40	2.00	2.60	1.60
		6	BCH-115	2.60	2.40	2.60	2.00	2.60	2.40	2.60	2.60	2.60	2.60	2.60	2.60
		7	BCH-211	3.00	1.80	3.00	3.00	2.00	2.00	3.00	2.60	2.40	2.00	3.00	2.60
		8	BCH-212	3.00	3.00	2.80	2.00	2.40	2.20	2.60	2.60	3.00	2.40	3.00	2.20
		9	BCH-213	2.40	2.20	2.00	1.60	1.60	1.20	2.50	1.60	2.20	1.60	2.20	2.20
		10	BCH-214 (T)	2.20	1.60	2.60	1.40	1.20	1.20	2.60	1.80	1.20	1.80	1.40	1.60
		11	BCH-215	1.00	1.00	2.00	1.00	0.00	0.00	2.00	1.00	0.00	1.00	1.00	1.00
FY	FY	12	#REF!	2.60	2.60	2.20	1.60	2.00	1.60	2.20	2.40	2.60	1.80	2.40	1.60
		1	BCH-311	3.00	2.00	2.20	3.00	2.00	2.20	3.00	1.20	1.80	1.00	3.00	2.20
		2	BCH-312	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	BCH-313	3.00	2.00	2.00	2.00	3.00	2.00	3.00	2.40	2.00	1.40	3.00	2.20
		4	BCH-314	2.40	2.20	2.00	3.00	2.00	3.00	2.00	2.40	3.00	3.00	3.00	2.60
		5	BCH-315	2.80	2.60	2.40	2.60	2.40	2.00	2.00	2.60	2.60	2.40	1.60	2.80
		6	BCH-411	2.80	2.60	2.40	2.60	2.40	2.00	2.00	2.60	2.60	2.40	1.60	2.80
		7	BCH-412	3.00	2.20	2.00	2.00	1.80	1.40	3.00	1.80	2.20	1.60	3.00	2.80
		8	BCH-413	3.00	2.00	2.25	2.00	1.50	1.25	2.25	1.75	2.25	1.75	3.00	1.75
		9	BCH-414	3.00	2.80	3.00	2.80	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
SY	SY	10	BCH-415	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

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
0	0	0	0	0	0	0	0	0	0	0	0
2.4	1.6	2.6	2.4	1.6	1.4	2.6	2.5	2	1.8	2.6	1.8
3	3	2.8	2.2	2.4	2	2.8	2.8	3	2.4	3	2
2.6	2.6	2.2	1.6	2	1.6	2.2	2.4	2.4	2	2.6	1.6
2.6	2.4	2.6	2	2.6	2.4	2.6	2.6	2.6	2.6	2.6	2.6
3	1.8	3	3	2	2	3	2.6	2.4	2	3	2.6
3	3	2.8	2	2.4	2.2	2.6	2.6	3	2.4	3	2.2
2.4	2.2	2	1.6	1.6	1.2	2.5	1.6	2.2	1.6	2.2	2.2
2.2	1.6	2.6	1.4	1.2	1.2	2.6	1.8	1.2	1.8	1.4	1.6
1	1	2	1	0	0	2	1	0	1	1	1
2.6	2.6	2.2	1.6	2	1.6	2.2	2.4	2.6	1.8	2.4	1.6
3	2	2.2	3	2	2.2	3	1.2	1.8	1	3	2.2
2.4	2.2	2	3	2	3	2	2.4	3	3	3	2.6
3	2	2	2	3	2	3	2.4	2	1.4	3	2.2
2.4	2.2	2	3	2	3	2	2.4	3	3	3	2.6
2.8	2.6	2.4	2.6	2.4	2	2	2.6	2.6	2.4	1.6	2.8
2.8	2.6	2.4	2.6	2.4	2	2	2.6	2.6	2.4	1.6	2.8
3	2.2	2	2	1.8	1.4	3	1.8	2.2	1.6	3	2.8
3	2	2.25	2	1.5	1.25	2.25	1.75	2.25	1.75	3	1.75
3	2.8	3	2.8	3	3	3	3	3	3	3	3
3	3	3	3	3	3	3	3	3	3	3	3

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
100	100	100	100	100	100	100	100	100	100	100	100
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
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
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	#DIV/0!	#DIV/0!	100	100	#DIV/0!	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	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	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100

FY

SY

CO-PSO MAPPING

	Course	PSO1	PSO2	PSO3
1	BCH-111	2.60	2.20	2.00
2	BCH-112	0.00	0.00	0.00
3	BCH-113	2.40	2.00	2.40
4	BCH-114	2.60	2.60	2.60
5	BCH-114	2.20	2.20	2.00
6	BCH-115	2.40	2.40	2.60
7	BCH-211	3.00	2.60	2.40
8	BCH-212	2.60	2.60	2.60
9	BCH-213	2.20	1.60	2.20
10	BCH-214 (T	1.60	1.60	1.40
11	BCH-215	1.00	2.00	1.00
12	#REF!	2.20	2.00	2.20
1	BCH-311	3.00	2.00	2.00
2	BCH-312	3.00	2.20	2.60
3	BCH-313	3.00	2.00	2.00
4	BCH-314	3.00	2.20	2.60
5	BCH-315	3.00	2.60	2.60
6	BCH-411	3.00	2.60	2.60
7	BCH-412	3.00	1.80	2.60
8	BCH-413	3.00	2.00	3.00
9	BCH-414	3.00	3.00	3.00
10	BCH-415	3.00	3.00	3.00

CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
BCH-111	1.3	2.2	2
BCH-112	0	0	0
BCH-113	2.4	2	2.4
BCH-114	2.6	2.6	2.6
BCH-114	2.2	2.2	2
BCH-115	2.4	2.4	2.6
BCH-211	3	2.6	2.4
BCH-212	2.6	2.6	2.6
BCH-213	2.2	1.6	2.2
BCH-214 (T)	1.6	1.6	1.4
BCH-215	1	2	1
#REF!	2.2	2	2.2
BCH-311	3	2	2
BCH-312	3	2.2	2.6
BCH-313	3	2	2
BCH-314	3	2.2	2.6
BCH-315	3	2.6	2.6
BCH-411	3	2.6	2.6
BCH-412	3	1.8	2.6
BCH-413	3	2	3
BCH-414	3	3	3
BCH-415	3	3	3

Percentage CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
BCH-111	50	100	100
BCH-112	#DIV/0!	#DIV/0!	#DIV/0!
BCH-113	100	100	100
BCH-114	100	100	100
BCH-114	100	100	100
BCH-115	100	100	100
BCH-211	100	100	100
BCH-212	100	100	100
BCH-213	100	100	100
BCH-214 (T	100	100	100
BCH-215	100	100	100
#REF!	100	100	100
BCH-311	100	100	100
BCH-312	100	100	100
BCH-313	100	100	100
BCH-314	100	100	100
BCH-315	100	100	100
BCH-411	100	100	100
BCH-412	100	100	100
BCH-413	100	100	100
BCH-414	100	100	100
BCH-415	100	100	100