

Academic Year 2018-19

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

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

PO1	To introduce the concepts in various allied subjects
PO2	To enrich students' knowledge
PO3	To help the students to build interdisciplinary approach
PO4	To inculcate sense of scientific responsibilities and social and environment awareness
PO5	To help students build-up a progressive and successful career
PO6	The coursework is designed to train the students to work independently and also to adapt themselves to work efficiently in in
PO7	The students will be able to develop skills, attitude and values required for self-directed, lifelong commitment to learning and
PO8	The student will be able to adopt code of ethics in professional and social context. Also able to demonstrate exemplary prof
PO9	the student will able to comprehend the complex interconnections between the biotechnology, medicine, economy and legal
PO10	nt opportunities in pharma industries, healthcare, food industry, dairies, academia and research both in private and public se
PO11	The student will utilize critical inquiry to analyze, design and conduct experiments to solve problems in various courses of bid
PO12	The student will be able to execute their professional roles as biotechnology professionals, employers and employees in var

Program Specific Outcome(PSO)

PSO1	y, from biochemistry to biophysics, from genetic engineering to stem cell research, from bioinformatics to genomics-proteom
PSO2	Application of these studies on living organisms and their bioprocesses are learnt by students.
PSO3	Economic and social renaissance is staged on biotechnology especially, since it's biomedical and cutting edge technologica

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Class		F.Y. Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code		Bb- 101		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Fundamentals of Chemistry	CO1	1	2	3	1	1	1	2	2	2	1	2	2	2	2	2
Semester No		Annual	CO2	2	2	1	1	1	2	2	1	1	3	2	3	1	2	3
Teacher Name		Ghumare sir	CO3	1	1	2	3	2	2	3	2	2	2	1	2	2	2	1
Course Outcomes			CO4	1	3	1	1	3	1	1	2	3	1	2	1	2	3	2
	CO1	The student will acquire a foundation of chemistry of sufficient breadth and depth to enable them	CO5	2	1	1	2	1	1	1	3	2	3	3	1	1	2	1
	CO2	Student will learn the laboratory skills needed to design, safely conduct and interpret chemical research.	Average	1.40	1.80	1.60	1.60	1.60	1.40	1.80	2.00	2.00	2.00	2.00	1.80	1.60	2.20	1.80
	CO3	To learn the basic concepts of Stereochemistry																
	CO4	To understand the basic concept of kinetic theory of gases and know how to solve numerical problems related to that topic																
	CO5	To understand rate laws, rate equations of different types of reactions, determine rate constant values, order of reactions, effect of temperature																

Class		F.Y. Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code		Bb- 102		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Fundamentals of Physics	CO1	2	3	1	1	2	2	1	2	2	2	2	2	1	2	
Semester No		Annual	CO2	1	2	1	3	1	1	3	2	3	1	3	2	3	2	1
Teacher Name		More sir	CO3	1	2	3	3	2	2	1	2	1		2	3	1	1	

Course Outcomes			CO4	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2
	CO1	Students will use mathematics and computation to describe and manipulate fundamental physical constructs and to solve problems.	CO5	1	2	2	1	1	3	3	3	1	1	1	3	1	3	2
	CO2	Demonstrate a growing conceptual understanding of the basic fields of physics	Average	1.40	2.20	1.60	2.00	1.40	2.00	2.20	2.20	1.60	1.25	2.00	2.00	2.20	1.60	1.60
	CO3	Use basic experimental apparatus common to the study of physical phenomena																
	CO4	Students will learn fluid mechanic by different measurement techniques																
	CO5	Using experimental, computational, and/or theoretical methods, students are able to understand geometrical optics and surface tension.																

Class		Course Outcomes	Program Outcomes												PSOs			
Subject Code	Bb- 103		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Basics of Plant & animal sciences	CO1	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1	
Semester No	Annual	CO2	2	3	1	1	2	2	1	2	2	2	2	2	2	1	2	
Teacher Name	Sagarbhavake and Prashant katke	CO3	1	2	1	3	1	1	3	2	3	1	3	2	3	2	1	
Course Outcomes		CO4	1	1	3	1	1	1	3	1	1	3	2	1	2	2	1	
	CO1	Students will able to apply concepts of breeding, physiology, nutrition, herd-health, economics and management into practical and profitable animal production programs.	CO5	2	2	1	3	2	1	2	2	1	2	1	3	1	1	2
	CO2	2. Students will be able develop feeding systems for farm animal production and companion animals	Average	1.40	2.00	1.80	1.80	1.60	1.20	2.20	1.60	1.60	2.20	1.80	1.80	1.80	1.80	1.40
	CO3	Learning and getting familiar with morphology & plant cell																
	CO4	Knowledge about unique, silent features and chemical compositions of cell wall																

	CO5	An understanding, deep knowledge about plants and the category of the living organisms as life form its features, Importance, Introduction to plants group.
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Class		F.Y. Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 107			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Microbiology		CO1	1	2	1	3	1	1	3	2	3	1	3	2	3	2	1
Semester No	Annual		CO2	1	2	3	3	2	2	1	2	1			2	3	1	1
Teacher Name	Asmita Gavhane		CO3	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2
Course Outcomes			CO4	1	2	3	2	1	3	2	3	1	3	3	2	2	1	2
	CO1	The student will be able to evaluate methods used to identify infectious agents in the clinical microbiology lab	CO5	1	1	2	3	2	2	3	2	2	2	1	2	2	2	1
	CO2	Student understands microorganism as a model system in life science studies and its importance in biotechnology.	Average	1.20	1.80	2.00	2.60	1.40	2.00	2.40	2.20	1.60	1.75	2.25	1.80	2.40	1.40	1.40
	CO3	Student learn to design artificial nutritional media for microorganisms and methods to grow them in laboratory																
	CO4	Student learn different types of microorganisms, their applications in different sector.																
	CO5	Microbiology is to provide an understanding of the natural history of infectious diseases in order to deal with the etiology, pathogenesis, laboratory diagnosis, treatment and control of infections in the community.																

Class		f y biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 112			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Quantative method in biology		CO1	1	2	1	3	1	1	3	2	3	1	3	2	3	2	1
Semester No	Annual		CO2	1	2	3	3	2	2	1	2	1			2	3	1	1

Teacher Name		Snehal shinde and Anuja bhalerao		CO3	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2
Course Outcomes				CO4	1	2	3	2	1	3	2	3	1	3	3	2	2	1	2
	CO1	the student will understand basic laborator rules and practices in microbiology.		CO5															
	CO2	The students will learn use of glasswares, instruments and their application commonly use in microbiology laboratory		Average	1.20	2.00	2.00	2.20	1.20	2.20	2.40	2.40	1.40	1.50	2.25	2.00	2.20	1.60	1.60
	CO3	To learn practical skill for observation of miroorganisms by suning various staining method and																	
	CO4	The students wii lknow method of handling of miroorganisms and biosafety measures																	
	CO5	The will understand how to apply the scientific method and hypothesis testing in the design and execution of experiments																	

Class		f y biotechnology		Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 111		PO1		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Laboratory exercises in bioscience		CO1	2	3	1	1	2	2	1	2	2	2	2	2	1	2		
Semester No	Annual		CO2	1	2	3	2	1	3	2	3	1	3	3	2	2	2		
Teacher Name	Prashant katke , Sagar Bavake and Asmita Gavhane		CO3	1	2	2	1	1	3	3	3	1	1	1	3	1	3		
Course Outcomes			CO4	1	2	3	1	2	1	2	1	1	3	1	1	1	3		
	CO1	Explain the theoretical basis of the tools, technologies and methods common to microbiology.		CO5															
	CO2	Demonstrate practical skills in the use of tools, technologies and methods common to microbiology.		Average	1.20	2.20	2.00	1.40	1.40	2.00	2.00	2.20	1.20	2.00	1.60	2.00	1.40	2.00	1.60
	CO3	The students will learn about Hydra and culturing techniques																	
	CO4	The students wii lknow method of handling of miroorganisms and biosafety measures																	

CO5	To study on morphological parameters of angiosperms and anatomy of dicot and monocots
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Class		f y biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 108			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Computers & applications		CO1	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1
Semester No	Annual		CO2	2	3	1	1	2	2	1	2	2	2	2	2	2	1	2
Teacher Name	Shaheen mam		CO3	1	2	3	2	1	3	2	3	1	3	3	2	2	1	2
Course Outcomes			CO4	1	2	2	1	1	3	3	3	1	1	1	3	1	3	2
	CO1	Students will get basic knowledge (handling devices, role of operating system etc.) of computers	CO5	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2
	CO2	They will also familiar with how data gets stored through Database Management System	Average	1.40	2.20	2.00	1.40	1.40	2.20	2.20	2.20	1.20	2.00	1.80	1.80	1.60	1.80	1.80
	CO3	They can distinguish between CUI and GUI operating system and handling the same																
	CO4	They will capable to create documentation, budgets and mathematical calculations and also make attractive presentations using ms word, excel and Power point respectively																
	CO5	They can easily do surfing on internet																

Class		f y biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 105			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Fundamentals of Biological Chemistry		CO1	1	2	1	3	1	2	2	1	3	1	1	3	2	1	2
Semester No	Annual		CO2	1	1	3	2	2	2	2	1	2	2	1	2	1	2	2
Teacher Name	Poonam Hiranandani		CO3	2	2	1	2	1	1	2	2	1	3	1	1	1	2	2
Course Outcomes			CO4	2	1	2	1	1	2	1	2	2	1	2	2	2	2	3
	CO1	The course aims to provide an advanced understanding of the core principles and topics of Biochemistry	CO5	3	3	1	1	1	1	3	1	1	2	3	1	2	3	1

	CO2	To enable students to acquire a specialized knowledge and understanding of selected aspects by means of a stem/branch lecture series and a research project	Average	1.80	1.80	1.60	1.80	1.20	1.60	2.00	1.40	1.80	1.80	1.60	1.80	1.60	2.00	2.00
	CO3	Students will be acquainted with the knowledge of structures, functions, and interactions of proteins, nucleic acids, carbohydrates and lipids																
	CO4	Students will learn about enzyme kinetics and types of inhibition as enzymes are important in catalyzing various reactions in the body																
	CO5	The course will help the students to understand the abnormalities in the metabolism their relationship to various diseases. In addition to, it will help to understand the mechanism underlying correct disorders with dietary modifications or genetic modifications.																

Class		F.Y. Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 106			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Biophysics & Instrumentation		CO1	1	2	3	2	1	3	2	3	1	3	3	2	2	1	2
Semester No	Annual		CO2	3	2	1	1	1	2	1	1	1	1	2	2	2	1	1
Teacher Name	Anuja Bhalerao		CO3	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1
Course Outcomes			CO4	2	3	1	1	2	2	1	2	2	2	2	2	2	1	2
	CO1	Biophysics should be apply the principles of physical sciences to understand and solve biological complexities	CO5	1	1	2	3	2	2	3	2	2	2	1	2	2	2	1
	CO2	Using the knowledge gained during the course, students should be able to address the academic and industrial research problems	Average	1.60	2.00	2.00	1.60	1.60	2.00	1.80	1.80	1.40	2.20	1.80	1.80	1.80	1.60	1.40
	CO3	Students will develop a conceptual understanding of connections between physics and biology																

	CO4	Students will comprehend the molecular components which constitutes the cell membrane and give its different electrical and physicochemical properties. They will understand the importance of transport in the cells.
	CO5	Students will gain an understanding of interpreting spectra and will be able to explain how spectroscopic methods are used for quantitative analysis of biomolecules.

Class		F y biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 110			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in physics, biophysics and instrumentation		CO1	2	2	2	1	1	2	1	3	3	2	1	1	1	2	3
Semester No	Annual		CO2	2	3	1	2	1	1	2	2	1	3	1	2	1	1	1
Teacher Name	More sir and Anuja Bhalerao		CO3	3	2	1	1	3	2	2	2	1	2	2	1	2	3	1
Course Outcomes			CO4	1	1	3	2	1	1	2	1	2	1	2	2	2	1	1
	CO1	To gain practical knowledge by applying the experimental methods to correlate with the Physics theory.	CO5	1	2	1	2	1	1	3	2	1	1	3	2	3	2	2
	CO2	To learn the usage of electrical and optical systems for various measurements.	Average	1.80	2.00	1.60	1.60	1.40	1.40	2.00	2.00	1.60	1.80	1.80	1.60	1.80	1.80	1.60
	CO3	Apply the scientific method and hypothesis testing in the design and execution of experiments.																
	CO4	The students will learn to determine diffusion pressure, surface tension																
	CO5	The students will learn about osmosis, dialysis and use of GM counter																

Class		F y biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 109			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Pract. in chemistry and biochemistry		CO1	1	1	2	1	1	1	2	1	1	2	1	1	1	1	2
Semester No	Annual		CO2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Teacher Name	Ghumare sir and Poonam Hiranandini		CO3	2	1	1	2	1	1	2	2	2	2	1	1	2	2	2

Course Outcomes			CO4	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
	CO1	Increase students practical or laboratory experience or exposure.	CO5	2	1	2	2	2	1	2	1	2	1	1	2	2	2	1
	CO2	Enhance student's practical laboratory skills and equipment or instrument use.	Average	1.60	1.40	1.60	1.80	1.60	1.20	2.00	1.40	2.00	1.80	1.20	1.60	1.60	1.80	1.80
	CO3	They will understand the methodology of a scientific experiment.																
	CO4	To establish an understanding of the quantitative aspects of biochemical analyses.																
	CO5	To develop basic practical biochemical skills for the handling and analysis of biomolecules																

Class	fy biotechnology	Course Outcomes	Program Outcomes												PSOs			
Subject Code	Bb- 104		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Mathematics & stastical method for biologists'	CO1	2	3	2	3	1	2	3	2	3	1	1	2	3	1	3	
Semester No	Shaheen Madam	CO2	2	2	3	1	1	1	2	3	3	3	3	1	1	3	1	
Teacher Name		CO3	1	2	1	2	2	2	2	2	1	1	2	1	2	2	2	
Course Outcomes		CO4	2	1	1	2	1	1	2	2	2	2	1	1	2	2	2	
	CO1	Be able to communicate mathematical and logical ideas in writing.	CO5	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
	CO2	Be able to apply problem solving and logical skills.	Average	1.60	2.00	1.60	2.00	1.40	1.40	2.20	2.00	2.40	1.80	1.60	1.40	1.80	2.00	2.00
	CO3	Have a deeper understanding of mathematical theory.																
	CO4	Have a solid knowledge of elementary statistics.																
	CO5	They will able to choose and apply appropriate statistical methods for analyzing one or two variables.																

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Class		sy biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 211			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Genetics and immunology		CO1	1	2	1	1	1	2	3	3	2	1	2	3	1	2	2
Semester No	I		CO2	2	3	2	3	1	2	3	2	3	1	1	2	3	1	3
Teacher Name	sushila kamble and Jyotsna galande		CO3	2	2	3	1	1	1	2	3	3	3	3	1	1	3	1
Course Outcomes	Students will learn the basic principles of inheritance at the molecular, cellular and organismal levels and gene expressions.		CO4	1	2	1	2	2	2	2	2	1	1	2	1	2	2	2
	CO1	Understand and appreciate the diversity of life as it evolved over time by processes of mutation, selection and genetic change.	CO5	1	1	1	1	2	3	1	1	1	2	1	1	1	1	3
	CO2	They learn about chromosomal aberrations and structure of chromosomes.	Average	1.40	2.00	1.60	1.60	1.40	2.00	2.20	2.20	2.00	1.60	1.80	1.60	1.60	1.80	2.20
	CO3	This course gives an overview on the immune system including organs, cells and receptors.																
	CO4	The students learns about molecular basis of antigen recognition, hypersensitivity reaction, antigen-antibody reactions.																
	CO5																	

Class		sy biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 212			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Cell Biology		CO1	2	1	2	1	1	2	1	2	3	1	3	1	1	1	1
Semester No	I		CO2	3	2	3	3	1	3	1	1	2	3	2	2	3	2	3
Teacher Name	Rajashri bhope		CO3	1	2	2	1	1	3	3	3	1	1	1	3	1	3	2
Course Outcomes			CO4	2	1	2	2	2	1	1	2	1	2	1	1	2	2	1
	CO1	This course introduces the students to the basics of cell and its components.	CO5	1	2	1	1	2	1	2	1	1	1	1	1	2	1	2

	CO2	This gives them a strong foundation on the basic unit of life	Average	1.80	1.60	2.00	1.60	1.40	2.00	1.60	1.80	1.60	1.60	1.60	1.60	1.80	1.80	1.80
	CO3	At the end of the course, the student has a strong foundation on the functions of the cell.																
	CO4	To understand the structures and purposes of basic components of eukaryotic cells, especially macromolecules, membranes, and organelles																
	CO5	To understand structure and function of various cell organelle.																

Class		sy biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 213			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Environmental Biology and Biotechnology		CO1	2	1	2	1	2	1	1	2	3	2	2	1	2	2	2
Semester No	I		CO2	2	2	3	1	1	1	2	3	3	3	3	1	1	3	1
Teacher Name	Jyotsna galande		CO3	1	2	3	3	2	2	1	2	1			2	3	1	1
Course Outcomes			CO4	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2
	CO1	The main objective of this paper is to create an awareness among the students about the environment.	CO5	1	2	2	1	1	3	3	3	1	1	1	3	1	3	2
	CO2	They will learn about ecological organization. The students learn about rock types, basic concepts of community, pollution and biodiversity	Average	1.60	1.80	2.20	1.60	1.40	1.80	2.00	2.40	1.80	1.75	2.00	1.60	1.80	2.00	1.60
	CO3	The objective of this course is to introduce the students to the role of biotechnology in waste water management.																
	CO4	The students learn about role of microbes in biodegradation, bioremediation and composting.																
	CO5	The students learn about modern conservation practices, Red data book.																

Class		sy biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 214			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

Subject Name	Practicals in Environmental biotechnology		CO1	1	2	2	2	1	2	2	1	2	2	2	1	2	2	
Semester No	I		CO2	1	1	2	1	1	1	2	1	1	2	1	1	1	2	
Teacher Name	Jyostna Galande		CO3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Course Outcomes			CO4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	CO1	Whatever the students learned in their theory courses such as ecosystem, community, pollution and its effects, EIA case study etc. these concepts get verified with help of this course.	CO5															
	CO2	student will be able to study pollution indicator plants in terms of morphology and anatomy	Average	1.40	1.60	1.80	1.60	1.40	1.60	1.80	1.40	1.60	1.80	1.60	1.60	1.40	1.60	1.80
	CO3	Student will be able to study Microbial (Bacterial, Algal and Fungal) community estimation																
	CO4	Student will be able to study polluted and unpolluted soil by physical and chemical properties																
	CO5	Student will be able to Test genotoxicity of water sample																

Class	sy biotech	Course Outcomes	Program Outcomes												PSOs			
Subject Code	Bb- 215		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Practicals in cell biology and genetics	CO1	1	2	2	2	1	2	2	1	2	2	2	2	1	2	2	
Semester No	I	CO2	1	1	2	1	1	1	2	1	1	2	1	1	1	1	2	
Teacher Name	Rajashri Bhope and	CO3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Course Outcomes			CO4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	CO1	This course will help better understanding of theoretical concepts like cell organelles, staining techniques, blood cell types, and mitosis and meiosis slide preparation.	CO5															
	CO2	Students will learn genetics problems, Mendelian inheritance and gene interaction.	Average	1.40	1.60	1.80	1.60	1.40	1.60	1.80	1.40	1.60	1.80	1.60	1.60	1.40	1.60	1.80
	CO3	Student will be able to study methods of cell lysis and confirmation																
	CO4	Student will be able to study gene interaction																
	CO5	student will be able to study karyotype analysis																

Class		sy biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 221	PO1		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Molecular biology	CO1	1	2	2	1	1	3	3	3	1	1	1	3	1	3	2	
Semester No	II	CO2	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2	
Teacher Name	Rajashri bhope	CO3	1	1	1	2	1	1	2	1	2	1	1	2	1	1	1	
Course Outcomes		CO4	1	1	2	2	3	3	2	2	1	2	2	1	1	2	3	
	CO1	To understand the structure of DNA through Watson & Crick model	CO5	2	2	3	3	1	1	3	3	1	2	3	3	2	2	3
	CO2	The course teaches the students about genes, and genome organization and comparison of these in different organisms	Average	1.40	1.60	1.80	2.00	1.40	2.00	2.60	2.20	1.20	1.40	1.80	2.00	1.40	1.80	2.20
	CO3	They learn about structure and function of DNA, RNA																
	CO4	It mainly describe central dogma of biology in eukaryotic and prokaryotes.																
	CO5	Students learn about basic replication process																

Class		SY BSc Biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 222	PO1		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Animal and Plant development	CO1	1	2	3	2	1	3	2	3	1	3	3	2	2	1	2	
Semester No	II	CO2	3	3	2	1	2	2	1	3	3	2	3	2	3	2	3	
Teacher Name	Prashant katke and Jyotsna galande	CO3	2	1	2	1	2	1	1	2	3	2	2	1	2	2	2	
Course Outcomes		CO4	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1	
	CO1	Course contains vegetative and reproductive development of plant.	CO5	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2
	CO2	The objective of this course is to provide a comprehensive understanding of the concepts of early animal development.	Average	1.80	2.00	2.20	1.40	1.60	1.80	1.80	2.20	1.80	2.20	2.20	1.40	2.00	1.80	2.00
	CO3	Upon successful completion of this subject student should be able to acquire a deep knowledge in techniques, mechanisms and biotechnological methods in plant development as: Students well understood the principals and unique feature of development as they are able to describe the developmental process in plants.																

	CO4	The basic development pathway understood and depicted with diagrams by studying the various model system.
	CO5	Student understood the concept of microsporogenesis, Megaspores, double fertilization, Endosperm development by performing various practical, identified the stages

Class		SY BSc Biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 223			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Scientific writing and communication		CO1	2	2	1	2	1	2	3	2	1	1	2	1	2	1	2
Semester No	II		CO2	3	3	2	1	2	2	1	3	3	2	3	2	3	2	3
Teacher Name	Athavale Sir		CO3	1	1	1	2	1	1	2	1	2	1	1	2	1	1	1
Course Outcomes			CO4	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1
	CO1	Course contains vegetative and reproductive development of plant.	CO5															
				2	3	1	1	2	2	1	2	2	2	2	2	2	1	2
	CO2	It also includes model systems like Fucus, and Arabidopsis	Average	1.80	2.20	1.60	1.40	1.60	1.60	1.80	1.80	1.80	1.80	1.80	1.60	1.80	1.60	1.80
	CO3	Program includes concept of dedifferentiation, redifferentiation, determination, and competence.																
	CO4	Students will learn about male and female gamete development																
	CO5	It includes gametogenesis, pattern of cleavage,																

Class		SY BSc Biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 224			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Metabolic Pathways		CO1	2	1	2	1	2	1	1	2	3	2	2	1	2	2	2
Semester No	II		CO2	3	2	3	2	3	2	3	3	1	3	2	2	3	3	3
Teacher Name	Jyotsna galande		CO3	1	1	1	2	1	1	2	1	2	1	1	1	1	1	1
Course Outcomes			CO4	1	3	1	1	1	3	1	1	2	1	3	3	1	2	1

CO1	The student will be able to learn Carbohydrate catabolism, and its association with cellular energy production, and carbohydrate anabolism in plants and animal cells.
CO2	The student will be able to learn Lipid biosynthesis, acids and cholesterol, ketone bodies, acidosis, ketosis Degradation of fatty
CO3	The student will learn and understand about the Biosynthesis of purines and pyrimidine nucleotides, degradation of nucleotides, salvage pathways, biosynthesis and biodegradation of amino acids. Inborn errors of metabolism.
CO4	It helps the students in appreciating the integrated approach of interrelated pathways of catabolism and anabolism
CO5	It also emphasizes on metabolic disorders at molecular level.

CO5	2	1	2	2	2	2	2	2	2	1	2	2	2	2	3	2
Average	1.80	1.60	1.80	1.60	1.80	1.80	1.80	1.80	1.80	1.80	1.80	2.00	1.80	1.80	2.20	1.80

Class	SY BSc Biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 225		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in Molecular Biology	CO1	1	2	2	1	1	2	1	2	3	1	1	2	1	2	2
Semester No	II	CO2	2	1	2	2	1	2	2	2	1	2	2	2	2	1	2
Teacher Name	Rajashri Bhope	CO3	2	1	2	1	2	2	1	2	2	1	2	2	1	2	1
Course Outcomes		CO4	1	2	1	2	1	2	1	2	1	1	2	1	1	1	1
		CO1															
		CO5	2	2	1	2	1	2	2	1	2	1	2	1	2	2	1
		Average	1.60	1.60	1.60	1.60	1.20	2.00	1.40	1.80	1.80	1.20	1.80	1.60	1.40	1.60	1.40
		CO2															
		CO3															
		CO4															
		CO5															

Class		SY BSc Biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code		Bb-226	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Practicals in development Biology	CO1	1	2	2	1	1	2	1	2	3	1	1	2	1	2	2
Semester No		II	CO2	2	1	2	2	1	2	2	2	1	2	2	2	2	1	2
Teacher Name		Jyotsna galande and Prashant Katke	CO3	2	1	2	1	2	2	1	2	2	1	2	2	1	2	1
Course Outcomes			CO4	1	2	1	2	1	2	1	2	1	1	2	1	1	1	1
	CO1	After completion of this course, students will be able to understand methods of plant development and SAM, RAM through a) Dissection b) Sectioning c) Maceration d) Staining e) Mounting.	CO5															
	CO2	In Animal development, they understand different eggs, stages of egg development, effect of teratogen, life cycle of frog.	Average	2	2	1	2	1	2	2	1	2	1	2	1	2	2	1
	CO3	Student will be able to study development of male and female gametophytes		1.60	1.60	1.60	1.60	1.20	2.00	1.40	1.80	1.80	1.20	1.80	1.60	1.40	1.60	1.40
	CO4	student will study different types of eggs																
	CO5	Student will be able to study amphioxus development, observation of embryos, different development stages																

Academic Year :	2018-19
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Class		Course Outcomes	Program Outcomes												PSOs		
Subject Code	T.Y.B.Sc.Biotechnology		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Bb-331	CO1	3	2	1	1	1	2	1	1	1	1	2	2	2	1	1
Semester No	Microbial Biotechnology	CO2	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1
Teacher Name	Asmita gavhane	CO3	2	1	2	1	2	1	1	2	3	2	2	1	2	2	2
Course Outcomes		CO4	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1
	CO1	CO5	1	2	1	2	1	1	2	2	1	1	1	2	1	2	1
	CO2	Average	1.60	1.80	2.00	1.20	1.60	1.20	1.60	1.40	1.40	2.00	1.40	1.40	1.40	2.20	1.20
	CO3																
	CO4																
	CO5																

Class		Course Outcomes	Program Outcomes												PSOs		
Subject Code	T.Y.B.Sc.Biotechnology		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Bb-332	CO1	1	2	2	1	2	1	1	2	1	3	1	3	3	1	2
Semester No	Plant and animal tissue culture	CO2	1	2	3	3	1	2	3	1	1	2	1	2	2	1	1
Teacher Name	Prashant katke and Jyotsna galande	CO3	3	1	2	3	1	3	3	1	1	1	3	1	2	1	1

Course Outcomes		CO4	3	1	1	1	3	2	1	2	2	1	3	1	3	2	2
CO1	The students acquaint with principles, technical requirement, scientific and commercial applications in Plant tissue culture.	CO5	2	3	2	1	1	1	2	2	2	2	2	2	1	1	1
CO2	support methodologies in plant tissue/cell culture to plant improvement,	Average	2.00	1.80	2.00	1.80	1.60	1.80	2.00	1.60	1.40	1.80	2.00	1.80	2.20	1.20	1.40
CO3	Become motivated to set goals towards pursuing graduate school and higher level positions, such as lab technician and key scientist in plant biotechnological research institutes and industries.																
CO4	Be able to describe structure of animal genes and genomes and how genes are expressed and what regulatory mechanisms contribute to control of gene expression.																
CO5	Be able to describe basic principles and techniques in genetic manipulation and genetic engineering.																

Class	T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 333		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Biodiversity & Systematics	CO1	3	2	1	1	2	2	2	1	2	1	2	3	2	1	2
Semester No	I	CO2	2	1	2	2	2	1	3	1	3	2	1	1	1	2	3
Teacher Name	Prashant katke	CO3	3	2	1	1	1	2	1	1	1	1	2	2	2	1	1
Course Outcomes		CO4	1	2	3	1	2	1	2	1	1	3	1	1	1	3	1
CO1	Evaluate the role of micro-organisms in specific biotechnological processes.	CO5	2	3	1	1	2	2	1	2	2	2	2	2	2	1	2
CO2	To understand growth phase of microorganisms and effect of environment on growth.	Average	2.20	2.00	1.60	1.20	1.80	1.60	1.80	1.20	1.80	1.80	1.60	1.80	1.60	1.60	1.80
CO3	Understand milk grading process and milk testing techniques.																
CO4	Demonstrate a clear understanding of how biochemical pathways relate to biotechnological applications. It involves understanding water testing methods for biological pollution and determination of water potability.																

CO5	Discover that life can be found almost everywhere on earth and explore the complexity of biodiversity
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Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb-334	PO1		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Practicals in Tissue Culture	CO1	1	3	2	3	2	1	1	2	2	2	1	1	2	2	2	
Semester No	I	CO2	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	
Teacher Name	Prashant katke and jyostna galande	CO3	2	1	1	2	1	1	2	2	2	2	1	1	2	2	2	
Course Outcomes		CO4	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	
	CO1	CO5	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	
	CO2	Average	1.20	2.00	1.20	2.20	1.80	1.00	1.80	1.40	2.60	2.00	1.00	1.60	1.40	2.00	2.00	
	CO3																	
	CO4																	
	CO5																	

Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 335	PO1		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Practicals in microbial biotechnology,field studies and report writing	CO1	1	3	2	3	2	1	1	2	2	2	1	1	2	2	2	
Semester No	I	CO2	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	
Teacher Name	Prashant katke and Asmita Gavhane	CO3	2	1	1	2	1	1	2	2	2	2	1	1	2	2	2	
Course Outcomes		CO4	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	
	CO1	CO5	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	
	CO2	Average	1.20	2.00	1.20	2.20	1.80	1.00	1.80	1.40	2.60	2.00	1.00	1.60	1.40	2.00	2.00	
	CO3																	
	CO4																	

CO5

Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb-341			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Large Scale Manufacturing process		CO1	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
Semester No	II		CO2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Teacher Name	Asmita Gavhane		CO3	2	1	1	2	1	2	1	2	1	2	1	2	1	2	1
Course Outcomes			CO4	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
	CO1	Evaluate factors that contribute in enhancement of cell and product formation during fermentation process.	CO5	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
	CO2	Analyze kinetics of cell and product formation in batch, continuous and fed-batch cultures	Average	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00	1.40	2.00	1.40
	CO3	Differentiate the rheological changes during fermentation process																
	CO4	Helps in the student's exposure on industrial applications of bioprocesses.																
	CO5	It also allows students to understand about upstream and downstream processing.																

Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 342			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Biochemical and Biophysical Techniques		CO1	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
Semester No	II		CO2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Teacher Name	Komal Sonawane		CO3	2	1	1	2	1	2	1	2	1	2	1	2	1	2	1
Course Outcomes			CO4	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
	CO1	To develop practical research skills	CO5	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
	CO2	To build analytical and presentation skills	Average	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00	1.40	2.00	1.40
	CO3	To be aware about advanced scientific methods																
	CO4	This significantly enhances the employability of the candidates in Biotechnological, Pharmaceutical Industries and Analytical Laboratories and research institutes																
	CO5	Student will able to isolate enzyme																

Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 343			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Recombinant DNA Technology		CO1	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
Semester No	II		CO2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Teacher Name	Rajashri bhope		CO3	2	1	1	2	1	2	1	2	1	2	1	2	1	2	1
Course Outcomes			CO4	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
	CO1	To familiarize the student with emerging field of biotechnology i.e. Recombinant DNA Technology as well as to create understanding and expertise in wet lab techniques in genetic engineering.	CO5															
	CO2	After completion of this course, student will be able to	Average	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00	1.40	2.00	1.40
	CO3	Explain sufficient scientific understanding of the subject																
	CO4	Have good knowledge of application of Recombinant DNA techniques in Life Sciences research that include transgenic technology, gene therapy, forensics and parental disputes. Use of molecular markers and their applications.																
	CO5	They learn about plasmids, vectors and other vectors used for gene transfer.																

Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb -344			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Techniques in genetic engineering		CO1	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
Semester No	II		CO2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Teacher Name	Rajashri bhope		CO3	2	1	1	2	1	2	1	2	1	2	1	2	1	2	1
Course Outcomes			CO4	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
	CO1	This course teaches RDNA technology techniques and their application in the field of genetic engineering	CO5															
	CO2	After completion of this course, student will be able to	Average	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00	1.40	2.00	1.40
	CO3	They learn about plasmids, vectors and gain knowledge on the construction of cDNA libraries																

	CO4	knowledge on gene manipulation, gene expression, etc. which prepares them for further studies in the area of genetic engineering
	CO5	Understand the concept and applications of PCR

Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 345			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practicals in LSMP and BBT		CO1	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
Semester No	II		CO2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Teacher Name	Asmita gavhane and komal sonawane		CO3	2	1	1	2	1	2	1	2	1	2	1	2	1	2	1
Course Outcomes			CO4	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2
	CO1	To understand design of bioreactors and control necessary for maximizing production.	CO5	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
	CO2	Select and optimize media for maximum production of microbial metabolites	Average	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00	1.40	2.00	1.40
	CO3	Designing of protocols for strain improvement and separation of molecules after fermentation process.																
	CO4	To be aware about advanced scientific methods																
	CO5	This significantly enhances the employability of the candidates in Biotechnological, Pharmaceutical Industries and Analytical Laboratories and research institutes																

CO-PO Mapping

		Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FY	FY	1 Bb- 101	1.40	1.80	1.60	1.60	1.60	1.40	1.80	2.00	2.00	2.00	2.00	1.80
		2 Bb- 102	1.40	2.20	1.60	2.00	1.40	2.00	2.20	2.20	1.60	1.25	2.00	2.00
		3 Bb- 103	1.40	2.00	1.80	1.80	1.60	1.20	2.20	1.60	1.60	2.20	1.80	1.80
		4 Bb- 107	1.20	1.80	2.00	2.60	1.40	2.00	2.40	2.20	1.60	1.75	2.25	1.80
		5 Bb- 112	1.20	2.00	2.00	2.20	1.20	2.20	2.40	2.40	1.40	1.50	2.25	2.00
		6 Bb- 111	1.20	2.20	2.00	1.40	1.40	2.00	2.00	2.20	1.20	2.00	1.60	2.00
		7 Bb- 108	1.40	2.20	2.00	1.40	1.40	2.20	2.20	2.20	1.20	2.00	1.80	1.80
		8 Bb- 105	1.80	1.80	1.60	1.80	1.20	1.60	2.00	1.40	1.80	1.80	1.60	1.80
		9 Bb- 106	1.60	2.00	2.00	1.60	1.60	2.00	1.80	1.80	1.40	2.20	1.80	1.80
		10 Bb- 110	1.80	2.00	1.60	1.60	1.40	1.40	2.00	2.00	1.60	1.80	1.80	1.60
		11 Bb- 109	1.60	1.40	1.60	1.80	1.60	1.20	2.00	1.40	2.00	1.80	1.20	1.60
		12 Bb- 104	1.60	2.00	1.60	2.00	1.40	1.40	2.20	2.00	2.40	1.80	1.60	1.40
SY	SY	1 Genetics and in	1.40	2.00	1.60	1.60	1.40	2.00	2.20	2.20	2.00	1.60	1.80	1.60
		2 Bb- 212	1.80	1.60	2.00	1.60	1.40	2.00	1.60	1.80	1.60	1.60	1.60	1.60
		3 Bb- 213	1.60	1.80	2.20	1.60	1.40	1.80	2.00	2.40	1.80	1.75	2.00	1.60
		4 Bb- 214	1.40	1.60	1.80	1.60	1.40	1.60	1.80	1.40	1.60	1.80	1.60	1.60
		5 Bb- 215	1.40	1.60	1.80	1.60	1.40	1.60	1.80	1.40	1.60	1.80	1.60	1.60
		6 Bb- 221	1.40	1.60	1.80	2.00	1.40	2.00	2.60	2.20	1.20	1.40	1.80	2.00
		7 Bb- 222	1.80	2.00	2.20	1.40	1.60	1.80	1.80	2.20	1.80	2.20	2.20	1.40
		8 Bb- 223	1.80	2.20	1.60	1.40	1.60	1.60	1.80	1.80	1.80	1.80	1.80	1.60
		9 Bb- 224	1.80	1.60	1.80	1.60	1.80	1.80	1.80	1.80	1.80	1.80	2.00	1.80
		10 Bb- 225	1.60	1.60	1.60	1.60	1.20	2.00	1.40	1.80	1.80	1.20	1.80	1.60
		11 Bb-226	1.60	1.60	1.60	1.60	1.20	2.00	1.40	1.80	1.80	1.20	1.80	1.60
TY	TY	1 Bb-331	1.60	1.80	2.00	1.20	1.60	1.20	1.60	1.40	1.40	2.00	1.40	1.40
		2 Bb-332	2.00	1.80	2.00	1.80	1.60	1.80	2.00	1.60	1.40	1.80	2.00	1.80
		3 Bb- 333	2.20	2.00	1.60	1.20	1.80	1.60	1.80	1.20	1.80	1.80	1.60	1.80
		4 Bb-334	1.20	2.00	1.20	2.20	1.80	1.00	1.80	1.40	2.60	2.00	1.00	1.60
		5 Bb- 335	1.20	2.00	1.20	2.20	1.80	1.00	1.80	1.40	2.60	2.00	1.00	1.60
		6 Bb-341	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00
		7 Bb- 342	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00
		8 Bb- 343	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00
		9 Bb -344	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00
		10 Bb- 345	2.00	1.40	1.80	1.60	1.80	1.60	1.80	1.20	1.00	1.60	1.00	2.00

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
0.578667	0.744	0.661333	0.661333333	0.661333	0.578667	0.744	0.826667	0.826667	0.826667	0.826667	0.744
0.429333	0.674667	0.490667	0.613333333	0.429333	0.613333	0.674667	0.674667	0.490667	0.383333	0.613333	0.613333
0.728	1.04	0.936	0.936	0.832	0.624	1.144	0.832	0.832	1.144	0.936	0.936
0.624	0.936	1.04	1.352	0.728	1.04	1.248	1.144	0.832	0.91	1.17	0.936
1.2	2	2	2.2	1.2	2.2	2.4	2.4	1.4	1.5	2.25	2
0.624	1.144	1.04	0.728	0.728	1.04	1.04	1.144	0.624	1.04	0.832	1.04
0.728	1.144	1.04	0.728	0.728	1.144	1.144	1.144	0.624	1.04	0.936	0.936
0.936	0.936	0.832	0.936	0.624	0.832	1.04	0.728	0.936	0.936	0.832	0.936
0.832	1.04	1.04	0.832	0.832	1.04	0.936	0.936	0.728	1.144	0.936	0.936
1.224	1.36	1.088	1.088	0.952	0.952	1.36	1.36	1.088	1.224	1.224	1.088
1.6	1.4	1.6	1.8	1.6	1.2	2	1.4	2	1.8	1.2	1.6
0.832	1.04	0.832	1.04	0.728	0.728	1.144	1.04	1.248	0.936	0.832	0.728
0.578667	0.826667	0.661333	0.661333333	0.578667	0.826667	0.909333	0.909333	0.826667	0.661333	0.744	0.661333
0.744	0.661333	0.826667	0.661333333	0.578667	0.826667	0.661333	0.744	0.661333	0.661333	0.661333	0.661333
0.661333	0.744	0.909333	0.661333333	0.578667	0.744	0.826667	0.992	0.744	0.723333	0.826667	0.661333
0.578667	0.661333	0.744	0.661333333	0.578667	0.661333	0.744	0.578667	0.661333	0.744	0.661333	0.661333
0.429333	0.490667	0.552	0.490666667	0.429333	0.490667	0.552	0.429333	0.490667	0.552	0.490667	0.490667
0.578667	0.661333	0.744	0.826666667	0.578667	0.826667	1.074667	0.909333	0.496	0.578667	0.744	0.826667
0.36	0.4	0.44	0.28	0.32	0.36	0.36	0.44	0.36	0.44	0.44	0.28
0.744	0.909333	0.661333	0.578666667	0.661333	0.661333	0.744	0.744	0.744	0.744	0.744	0.661333
0.552	0.490667	0.552	0.490666667	0.552	0.552	0.552	0.552	0.552	0.552	0.613333	0.552
0.661333	0.661333	0.661333	0.661333333	0.496	0.826667	0.578667	0.744	0.744	0.496	0.744	0.661333
0.32	0.32	0.32	0.32	0.24	0.4	0.28	0.36	0.36	0.24	0.36	0.32
0.661333	0.744	0.826667	0.496	0.661333	0.496	0.661333	0.578667	0.578667	0.826667	0.578667	0.578667
0.613333	0.552	0.613333	0.552	0.490667	0.552	0.613333	0.490667	0.429333	0.552	0.613333	0.552
0.909333	0.826667	0.661333	0.496	0.744	0.661333	0.744	0.496	0.744	0.744	0.661333	0.744
0.816	1.36	0.816	1.496	1.224	0.68	1.224	0.952	1.768	1.36	0.68	1.088
0.368	0.613333	0.368	0.674666667	0.552	0.306667	0.552	0.429333	0.797333	0.613333	0.306667	0.490667
0.826667	0.578667	0.744	0.661333333	0.744	0.661333	0.744	0.496	0.413333	0.661333	0.413333	0.826667
1.04	0.728	0.936	0.832	0.936	0.832	0.936	0.624	0.52	0.832	0.52	1.04
0.826667	0.578667	0.744	0.661333333	0.744	0.661333	0.744	0.496	0.413333	0.661333	0.413333	0.826667
0.826667	0.578667	0.744	0.661333333	0.744	0.661333	0.744	0.496	0.413333	0.661333	0.413333	0.826667
0.826667	0.578667	0.744	0.661333333	0.744	0.661333	0.744	0.496	0.413333	0.661333	0.413333	0.826667

FY
SY
TY

CO-PSO MAPPING

	Course	PSO1	PSO2	PSO3
1	Bb- 101	1.60	2.20	1.80
2	Bb- 102	2.20	1.60	1.60
3	Bb- 103	1.80	1.80	1.40
4	Bb- 107	2.40	1.40	1.40
5	Bb- 112	2.20	1.60	1.60
6	Bb- 111	1.40	2.00	1.60
7	Bb- 108	1.60	1.80	1.80
8	Bb- 105	1.60	2.00	2.00
9	Bb- 106	1.80	1.60	1.40
10	Bb- 110	1.80	1.80	1.60
11	Bb- 109	1.60	1.80	1.80
12	Bb- 104	1.80	2.00	2.00
1	Genetics and im	1.60	1.80	2.20
2	Bb- 212	1.80	1.80	1.80
3	Bb- 213	1.80	2.00	1.60
4	Bb- 214	1.40	1.60	1.80
5	Bb- 215	1.40	1.60	1.80
6	Bb- 221	1.40	1.80	2.20
7	Bb- 222	2.00	1.80	2.00
8	Bb- 223	1.80	1.60	1.80
9	Bb- 224	1.80	2.20	1.80
10	Bb- 225	1.40	1.60	1.40
11	Bb-226	1.40	1.60	1.40
1	Bb-331	1.40	2.20	1.20
2	Bb-332	2.20	1.20	1.40
3	Bb- 333	1.60	1.60	1.80
4	Bb-334	1.40	2.00	2.00
5	Bb- 335	1.40	2.00	2.00
6	Bb-341	1.40	2.00	1.40
7	Bb- 342	1.40	2.00	1.40
8	Bb- 343	1.40	2.00	1.40
9	Bb -344	1.40	2.00	1.40
10	Bb- 345	1.40	2.00	1.40

CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	Bb- 101	0.661333	0.909333	0.744
	Bb- 102	0.674667	0.490667	0.490667
	Bb- 103	0.936	0.936	0.728
	Bb- 107	1.248	0.728	0.728
	Bb- 112	2.2	1.6	1.6
	Bb- 111	0.728	1.04	0.832
	Bb- 108	0.832	0.936	0.936
	Bb- 105	0.832	1.04	1.04
	Bb- 106	0.936	0.832	0.728
	Bb- 110	1.224	1.224	1.088
	Bb- 109	1.6	1.8	1.8
	Bb- 104	0.936	1.04	1.04
	Genetics and im	0.661333	0.744	0.909333
	Bb- 212	0.744	0.744	0.744
	Bb- 213	0.744	0.826667	0.661333
	Bb- 214	0.578667	0.661333	0.744
	Bb- 215	0.429333	0.490667	0.552
	Bb- 221	0.578667	0.744	0.909333
	Bb- 222	0.4	0.36	0.4
	Bb- 223	0.744	0.661333	0.744
	Bb- 224	0.552	0.674667	0.552
	Bb- 225	0.578667	0.661333	0.578667
	Bb-226	0.28	0.32	0.28
	Bb-331	0.578667	0.909333	0.496
	Bb-332	0.674667	0.368	0.429333
	Bb- 333	0.661333	0.661333	0.744
	Bb-334	0.952	1.36	1.36
	Bb- 335	0.429333	0.613333	0.613333
	Bb-341	0.578667	0.826667	0.578667
	Bb- 342	0.728	1.04	0.728
	Bb- 343	0.578667	0.826667	0.578667
	Bb -344	0.578667	0.826667	0.578667
	Bb- 345	0.578667	0.826667	0.578667

Percentage CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	Bb- 101	41.33333	41.33333	41.33333
	Bb- 102	30.66667	30.66667	30.66667
	Bb- 103	52	52	52
	Bb- 107	52	52	52
	Bb- 112	100	100	100
	Bb- 111	52	52	52
	Bb- 108	52	52	52
	Bb- 105	52	52	52
	Bb- 106	52	52	52
	Bb- 110	68	68	68
	Bb- 109	100	100	100
	Bb- 104	52	52	52
	Genetics and im	41.33333	41.33333	41.33333
	Bb- 212	41.33333	41.33333	41.33333
	Bb- 213	41.33333	41.33333	41.33333
	Bb- 214	41.33333	41.33333	41.33333
	Bb- 215	30.66667	30.66667	30.66667
	Bb- 221	41.33333	41.33333	41.33333
	Bb- 222	20	20	20
	Bb- 223	41.33333	41.33333	41.33333
	Bb- 224	30.66667	30.66667	30.66667
	Bb- 225	41.33333	41.33333	41.33333
	Bb-226	20	20	20
	Bb-331	41.33333	41.33333	41.33333
	Bb-332	30.66667	30.66667	30.66667
	Bb- 333	41.33333	41.33333	41.33333
	Bb-334	68	68	68
	Bb- 335	30.66667	30.66667	30.66667
	Bb-341	41.33333	41.33333	41.33333
	Bb- 342	52	52	52
	Bb- 343	41.33333	41.33333	41.33333
	Bb -344	41.33333	41.33333	41.33333
	Bb- 345	41.33333	41.33333	41.33333