

Academic Year 2019-20

**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 intra, inter
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 professional,
PO9	biotechnology to transform our society and culture as a whole.
PO10	private and public sectors as well as an entrepreneur.
PO11	biotechnology by the use of classical as well as modern approach
PO12	industries, regulators, researchers, educators, managers and an entrepreneur for the upliftment of the society.

Program Specific Outcome(PSO)

PSO1	The interdisciplinary nature of biotechnology helps student to understand living systems including animal, plant, microbes and their studies from molecular biology to cell biology, from biochemistry to biophysics, from genetic
PSO2	Application of these studies on living organisms and their bioprocesses are learnt by students. Economic and social renaissance is staged on biotechnology especially, since it's biomedical and cutting edge technological applicati
PSO3	Biotechnologists are always in demand as an efficient work force in fundamental research and industries.

engineering to stem cell research, from bioinformatics to genomics-proteomics, from environmental biology to biodiversity, from microbiology to bioprocess engineering, from bioremediation to material transformation and so on.

Academic Year :	2019-20
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Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt- 101			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	fundamentals of chemistry		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No	1		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Ghumre sir		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	To understand rate laws, rate equations of different types of reactions, determine rate constant values, order of reactions, effect of temperature and other factors on reaction rate, homogenous catalysis, catalytic effect on reaction rate, equations related to chemical catalysis	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	To understand about the formation and stability of reaction intermediates and their electrophilic and nucleophilic behavior.	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	To learn the basic concepts of Stereochemistry																
	CO4	To understand reaction kinetics, reaction thermodynamics and tautomerism of organic compounds.																
	CO5	To understand the basic concept of kinetic theory of gases and know how to solve numerical problems related to that topic																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt- 102			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Fundamentals of Physics		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No	1		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	More P.D		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	1	2	1	2	1	2	2	2	1	1	2	1	2	1

CO1	Students will use mathematics and computation to describe and manipulate fundamental physical constructs and to solve problems	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
CO2	Demonstrate a growing conceptual understanding of the basic fields of physics.	Average	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
CO3	Use basic experimental apparatus common to the study of physical phenomena.																
CO4	The students would gain substantial knowledge in various branches of physics																
CO5	Demonstrate their knowledge of the basic scientific principles and fundamental concepts and skills of the field.																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-103			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Biochemistry I		CO1	2	1	2	1	2	2	2	1	2	1	2	1	2	2	
Semester No	1		CO2	1	1	1	2	1	1	2	1	2	2	2	1	1	2	
Teacher Name	Komal Sonawane		CO3	1	2	2	2	2	2	1	2	1	1	1	2	2	1	
Course Outcomes			CO4	2	2	1	1	1	1	2	1	2	2	2	1	1	2	
	CO1	Be able to frame a scientific question or problem	CO5	1	2	2	2	2	2	1	2	1	1	1	2	2	1	
	CO2	Be able to undertake investigations and perform analyses that provide information about biochemical questions and help to solve biochemical problems	Average	1.40	1.60	1.60	1.60	1.60	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	
	CO3	.Be able to demonstrate accurate quantitative analysis and computer literacy.																
	CO4	Be able to communicate effectively, through writing and oral communication, the results of scientific investigations.																
	CO5	This course is designed to introduce the organic structure of living systems mainly dealing with biomolecules like carbohydrates, proteins, lipids, and nucleic acids																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt 104			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

Subject Name	BBt-104 Biophysics		CO1	2	2	2	2	2	2	1	2	3	1	2	1	2	2	2
Semester No	1		CO2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2
Teacher Name	Anuja Bhalerao		CO3	2	2	2	2	2	2	2	2	2	1	1	1	1	2	1
Course Outcomes			CO4	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1
	CO1	Biophysics should be apply the principles of physical sciences to understand and solve biological complexities.	CO5	1	1	1	2	1	1	2	2	2	2	1	2	3	2	2
	CO2	Using the knowledge gained during the course, students should be able to address the academic and industrial research problems	Average	1.40	1.40	1.40	1.60	1.40	1.40	1.40	1.60	1.80	1.40	1.60	1.60	2.00	1.60	1.60
	CO3	Perform experiments which involve making correct and appropriate use of a range of scientific equipment, keeping an accurate record of experimental work and analysing results and reaching non-trivial conclusions from them.																
	CO4	Communicate at an advanced level the results of both theoretical and experimental work in various forms including written reports, oral presentations and poster presentations.																
	CO5	Collaborate effectively with team members for scientific investigations and for the process of learning.																

Class	FYBSc BIOTECH		Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt- 105		Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	BBt-105 Animal Sciences I		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No	1		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Prashant Katake		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	1	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	The interdisciplinary nature of biotechnology integrates living systems including animals and their studies.	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	Be able to understand knowledge in basic and applied aspects of animal sciences.	Average	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	the students will understand the scientific responsibilities and social awareness about animals and their diversity.																

	CO4	students will learn various model organisms, parasitic behavior of animal in humans.
	CO5	Students learn Animal diversity as a source of food, Textiles, Shelter etc.

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-106			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	BBt-106 Plant Sciences I		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No	1		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Jyotsna Galande		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	Be able to formulate original questions about plants into empirically testable hypotheses.	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	They will be able to collect and analyze data obtained from original research, and translate and apply experimental data to advance the field and solve real- world problems.	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	Student will synthesize and apply knowledge to better understand and manage plant-based systems.																
	CO4	Study of Flower morphology , Inflorescence and its types of Inflorescence																
	CO5	Learning and getting familiar with morphology & plant cell.																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-107			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Microbiology I		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No	1		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Asmita Gavhane		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	1	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	The student will be able to understand history of use of microorganisms in nature and human life	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	The students will know about significant role of microbes in nature.	Average	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40

	CO3	Be able to understand what is Microbiology and various branches and scope of subject
	CO4	Be able to understand what is Microbiology and various branches and scope of subject
	CO5	The students will be familiar with concept of prokaryotes and eukaryotes and classification of microorganisms

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code		BBt-108		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Biomathematics and Biostatistics 1	CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No		1	CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name		Anuja bhalerao	CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	Be able to communicate mathematical and logical ideas in writing.	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	Be able to apply problem solving and logical skills.	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	Be able to apply problem solving and logical skills.																
	CO4	Be able to apply problem solving and logical skills.																
	CO5	They will able to choose and apply appropriate statistical methods for analyzing one or two variables																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code		BBt-109		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Practical in Chemistry & Biochemistry	CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No		1	CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name		Komal sonawane	CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	The students will learn practical or laboratory experience or	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	The student will learn to test water hardness , PH meter, colorimetry and applications	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40

	CO3	The students will learn about solution and reagent preparations
	CO4	The student will learn isolation and study about biomolecules from plant sources
	CO5	To establish an understanding of the quantitative aspects of biochemical analyses.

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code		BBt-110		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Practical In Plant and animal science	CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No		1	CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name		Jyostna Galande and Prashant Katke	CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
		CO1	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
		CO2	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
		CO3																
		CO4																
		CO5																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code		BBt-111		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Practical In Microbiology and biostatistics 1	CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No		1	CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name		Asmita Gavhane and Anuja Bhalerao	CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
		CO1	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2

	CO2	The students will learn use of glasswares, instruments and their application commonly use in microbiology laboratory	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	To learn practical skill for observation of microorganisms by suning various staining method and														
	CO4	The students wii lknow method of handling of microorganisms and biosafety measures														
	CO5	The will understand how to apply the scientific method and hypothesis testing in the design and execution of experiments														

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-112			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practical In Physics and Biophysics		CO1	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Semester No	1		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Komal sonawane		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	To gain practical knowledge by applying the experimental methods to correlate with the Physics theory.	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	To learn the usage of electrical and optical systems for various measurements.	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	To learn about travelling microscope																
	CO4	The students will learn to dertemine diffusion pressure,surface tension																
	CO5	The students will learn about osmosis ,dialysis and use of GM counter																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-201			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	fundamentals of Chemistry II		CO1	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Semester No	2		CO2	3	1	2	2	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Komal Sonawane		CO3	2	2	1	2	1	2	1	1	2	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1

CO1	To learn preparations, reactions and corresponding reaction mechanisms of organometallic compounds.
CO2	To study the properties and reactions of carbonyl compounds and corresponding reaction mechanisms.
CO3	To understand about different types of electrophilic and nucleophilic aromatic substitution reactions, reaction intermediates and their mechanisms.
CO4	To learn experimentally how to do the potentiometric and conductometric titrations of different compositions, determine the Ka of weak acid and heat of neutralization of a strong acid by a strong base.
CO5	To learn in detail about the first and second laws of Chemical Thermodynamics and the related terms; to get idea about thermo-chemistry and thermodynamic relationships and system of variable compositions.

CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Average	2.20	1.60	1.60	1.60	1.60	1.40	1.60	1.40	1.80	1.40	1.40	1.60	1.40	1.60	1.40

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-202			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Biochemistry II		CO1	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
Semester No	2		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Komal Sonawane		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
CO1	student will able to understand concept and properties of acid-base relationship		CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
CO2	student will able to understand physical and chemical properties of molecules as a linkage of biochemistry		Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
CO3	student will be able to understand:nature of biochemistry																	
CO4	students shall be able to assess and relate the concepts of chemistry to biology. identify the structures of amino acids, their chemical properties and their organization into polypeptides and proteins.																	
CO5	To understand the structure and functions of fundamental mono, di and trisaccharide and polysaccharides. R																	

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt 203			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Bioinstrumentation		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No	2		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Anuja Bhalerao		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	2	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	To learn Design and understand biomedical instruments that comply with the regulatory standards for medical devices.	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	Describe the key considerations for biological signal generation and measurements.	Average	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	To learn Design and apply knowledge within the context of a biomedical device.																
	CO4	An understanding of biomedical instrumentation principles in aspects of device design and applications.																
	CO5	To measure biological signals and design medical instruments, an understanding of electronics and measurement concepts and techniques is required.																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt- 204			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Animal Sciences II		CO1	1	2	1	2	1	2	1	1	2	2	2	2	2	2	1
Semester No	2		CO2	1	2	1	1	2	2	2	2	1	1	1	2	1	1	2
Teacher Name	Prashant Katke		CO3	2	1	2	2	1	1	1	2	2	2	2	2	1	1	2
Course Outcomes			CO4	2	2	2	1	1	2	2	1	1	1	1	2	2	1	2
	CO1	students learn integrated principles of nutrition and physiology define issues, enable reasoning, and devise solutions for progress in animal health and production	CO5	2	2	1	2	2	1	1	1	2	1	2	1	1	1	1
	CO2	Demonstrate hands-on skills for optimal care and management of farm and companion animals	Average	1.60	1.80	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.80	1.40	1.20	1.50

	CO3	Communicate effectively to deliver evolving scientific content in animal science to producers and the public
	CO4	Employ analytical skills to think critically, identify knowledge gaps and devise solutions to animal-related issues relevant to health and well-being of society.
	CO5	Apply principles of animal welfare to guide evolving practices for the ethical treatment and management of animals

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-205			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Plant Sciences II		CO1	1	2	1	2	1	2	1	1	2	2	2	2	2	1	
Semester No	2		CO2	1	2	1	1	2	2	2	2	1	1	1	2	1	1	2
Teacher Name	Jyotsna Galande		CO3	2	1	2	2	1	1	1	2	2	2	2	2	1	1	2
Course Outcomes			CO4	2	2	2	1	1	2	2	1	1	1	1	2	2	1	2
	CO1	Students will be able to identify plant vegetative and reproductive structures	CO5	2	2	1	2	2	1	1	1	2	1	2	1	1	1	1
	CO2	Students will understand basic principles, processes and functions of plant growth and reproduction, including photosynthesis, respiration, transpiration, vegetative growth and reproductive growth, fertilization and fruit formation.	Average	1.60	1.80	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.80	1.40	1.20	1.50
	CO3	Students will be able to apply their knowledge to solve problems related to plant growth, crop production and natural resource management.																
	CO4	Describe plant biology at genetic, molecular, physiological, and organismal levels to integrate plant functionalities in a hierarchical manner, from individual cells to the biosphere.																
	CO5	Know about the structure, life history and Economic importance of Gymnosperms																

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt-206			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

Subject Name	Microbiology II	CO1	2	2	3	2	2	3	1	1	2	3	2	3	1	3	2	
Semester No	2	CO2	2	3	2	3	3	2	1	2	2	0	2	3	2	2	2	
Teacher Name	Asmita Gavhane	CO3	1	3	3	3	2	2	3	2	2	0	2	2	2	1	3	
Course Outcomes		CO4	2	2	3	3	3	2	3	2	2	1	2	2	2	3	2	
	CO1	The student will be able to understand history of use of microorganisms in nature and human life	CO5	3	3	2	3	3	2	2	2	2	2	3	2	2	3	
	CO2	The students will know about significant role of microbes in nature.	Average	2.00	2.60	2.60	2.80	2.60	2.20	2.00	1.80	2.00	1.20	2.00	2.60	1.80	2.20	2.40
	CO3	Be able to understand what is Microbiology and various branches and scope of subject																
	CO4	will have knowledge about nutritional classification of bacteria																
	CO5	will learn about Growth and reproduction of microorganisms																

Class	FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs			
Subject Code	BBt-207	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Biomathematics and Biostatistics 2	CO1	2	3	3	2	2	3	1	1	2	3	2	3	1	3	2	
Semester No	2	CO2	2	2	3	3	3	2	1	2	2	0	2	3	2	2	2	
Teacher Name	Khan Farheen	CO3	1	2	3	3	2	2	2	2	2	0	2	2	2	1	2	
Course Outcomes		CO4	2	3	3	3	3	2	3	2	2	1	2	2	2	2	2	
	CO1	Be able to apply problem solving and logical skills.	CO5	3	3	2	3	3	2	2	2	2	2	3	2	2	3	
	CO2	Be able to communicate mathematical and logical ideas in writing.	Average	2.00	2.60	2.80	2.80	2.60	2.20	1.80	1.80	2.00	1.20	2.00	2.60	1.80	2.00	2.20
	CO3	Have a deeper understanding of mathematical theory.																
	CO4	Have a solid knowledge of elementary statistics.																
	CO5	They will be able to choose and apply appropriate statistical methods for analyzing one or two variables. They use technology to perform descriptive and inferential data analysis for one or two variables.																

Class		FYBSc BIOTECH	Program Outcomes												PSOs		
Subject Code	BBt- 208	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Computer in biology	1	2	1	2	1	2	1	1	2	2	2	2	2	2	1	
Semester No	2	1	2	1	1	2	2	2	2	1	1	1	2	1	1	2	
Teacher Name	Anuja bhalerao	2	1	2	2	1	1	1	2	2	2	2	2	1	1	2	
Course Outcomes		2	2	2	1	1	2	2	1	1	1	1	2	2	1	2	
	CO1	Develop ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.	2	2	1	2	2	1	1	1	2	1	2	1	1	1	
	CO2	To prepare students to undertake careers involving problem solving using computer science and technologies.	1.60	1.80	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.80	1.40	1.20	1.50
	CO3	Develop ability to pursue advanced studies and research in computer science.															
	CO4	To understand biological information stored in various databases is available online through internet															
	CO5	Students learn computational biology refers to the hypothesis based investigation of a specific biological problem using computers															

Class		FYBSc BIOTECH	Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt- 209	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3		
Subject Name	Practical In Chemistry and Biochemistry II	CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1	
Semester No	2	CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1	
Teacher Name	Ghumare sir and komal sonawane	CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2	
Course Outcomes		CO4	2	1	2	1	2	1	2	2	2	1	1	2	1	2	1	
	CO1	The student will learn about Viscometer and use.	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	The students will learn titration method for estimation of acids	Average	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40	1.40	
	CO3	They will understand stereochemistry.																
	CO4	To learn techniques of estimation of biomolecules and enzyme activity.																
	CO5	To learn thin layer chromatography and application																

Class		FYBSc BIOTECH		Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt- 210		PO1		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Practical In Plant and animal science		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1	
Semester No	2		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1	
Teacher Name	Jyostna Galande and Prashant katke		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2	
Course Outcomes			CO4	2	1	2	1	2	1	2	2	2	1	1	2	1	2	1	
	CO1	To study the process of osmosis, turgor pressure and diffusion pressure	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2	
	CO2	To determine of rate of respiration	Average	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40	
	CO3	To study about economically important plants																	
	CO4	To study of <i>Plasmodium sps, Fasciola sp. Honey Bee.</i>																	
	CO5	To study about Collection ,Classification and preservation of Insects																	

Class		FYBSc BIOTECH		Course Outcomes	Program Outcomes												PSOs		
Subject Code	BBt- 211		PO1		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Practical In Microbiology & Bioinstrumentation		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1	
Semester No	2		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1	
Teacher Name	Asmita Gavhane and Anuja Bhalerao		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2	
Course Outcomes			CO4	2	1	2	1	2	1	2	2	2	1	1	2	1	2	1	
	CO1	The students will learn about preparation of Bacterial and fungal growth media	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2	
	CO2	The students will learn Aseptic transfer techniques	Average	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40	
	CO3	The students will learn to demonstrate of microbes from various sources																	
	CO4	The students will learn different cultivation and enumeration techniques of microorganisms																	
	CO5	The students will learn about working and components of various types of centrifuge and microscopes																	

Class	FYBSc BIOTECH		Course	Program Outcomes												PSOs		
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Subject Code	BBt- 212		Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Practical In Computer & Biostatistics		CO1	2	1	2	1	2	1	2	1	2	1	1	2	1	2	1
Semester No	2		CO2	3	1	2	1	2	1	2	2	2	1	1	2	1	2	1
Teacher Name	Farheen shaikh		CO3	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
Course Outcomes			CO4	2	1	2	1	2	1	2	2	2	1	1	2	1	2	1
	CO1	The Information Technology prepares a student for basic knowledge using computer to solve data processing problems in life.	CO5	2	2	1	2	1	2	1	1	1	2	2	1	2	1	2
	CO2	Demonstrate a knowledge and understanding of using computers to solve problems related to practical applications.	Average	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.40
	CO3	Choose and apply appropriate statistical methods for analyzing one or two variables.																
	CO4	Interpret statistical results correctly, effectively, and in context.																
	CO5	To learn practical skill for observation of microorganisms by using various staining method and																



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

Class		sy biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Subject Name	Semester No		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Bb- 212	Cell Biology	I	CO1	2	2	3	2	2	2	1	2	2	1	1	1	2	1	2
			CO2	1	2	2	1	2	1	2	1	2	1	2	2	2	2	2

Teacher Name	Rajashri bhope		CO3	2	1	2	2	1	1	2	1	1	2	2	2	2	2	1
Course Outcomes			CO4	1	2	1	3	2	2	1	2	2	2	2	2	1	1	2
	CO1	This course introduces the students to the basics of cell and its components.	CO5	2	3	3	2	1	3	2	3	2	2	1	1	2	2	2
	CO2	This gives them a strong foundation on the basic unit of life	Average	1.60	2.00	2.20	2.00	1.60	1.80	1.60	1.80	1.80	1.60	1.60	1.60	1.80	1.60	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	1	2	2	1	1	2	1	2	3	1	1	2	1	2	2	
Semester No	I	CO2	2	1	2	2	1	2	2	2	1	2	2	2	2	1	2	
Teacher Name	Jyotsna galande	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	The main objective of this paper is to create an awareness among the students about the environment.	CO5	2	2	1	2	1	2	2	1	2	1	2	1	2	1	
	CO2	They will learn about ecological organization. The students learn about rock types, basic concepts of community, pollution and biodiversity	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
	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.
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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 it's effects, EIA case study etc. these concept get verified with help of this course.	CO5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	CO2	student will 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 able to study Microbial (Bacterial, Algal and Fungal) community estimation																
	CO4	Student will able to study polluted and unpolluted soil by physical and chemical properties																
	CO5	Student will 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	1	2	2	
Semester No	I		CO2	1	1	2	1	1	1	2	1	1	2	1	1	1	2	
Teacher Name	Rajashri Bhope and		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	This course will help better understanding of theoretical concept like cell organelles, staining techniques, blood cell types, and mitosis and meiosis slide preparation.	CO5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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 able to study methods of cell lysis and confirmation																
CO4	Student will able to study gene interaction																
CO5	student will 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	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	To understand the structure of DNA through Watson & Crick model		CO5	2	2	1	2	1	2	2	1	2	1	2	1	2	2	1
CO2	The course teaches the students about genes, and genome organization and comparison of these in different organisms		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
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	3	2	2	2	1	2	1	2	2	2	1	2	1	2	1
Semester No	II		CO2	2	1	2	1	2	1	1	1	2	1	1	1	2	1	1

Teacher Name		Prashant katke and Jyotsna galande	CO3	2	2	1	1	2	1	2	2	2	2	2	1	2	1	2
Course Outcomes			CO4	1	3	2	2	1	2	1	1	1	1	1	2	1	2	1
CO1	Course contains vegetative and reproductive development of plant.		CO5	3	2	1	3	2	3	2	2	2	2	2	3	2	3	2
CO2	The objective of this course is to provide a comprehensive understanding of the concepts of early animal development.	Average		2.20	2.00	1.60	1.80	1.60	1.80	1.40	1.60	1.80	1.60	1.40	1.80	1.60	1.80	1.40
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, Megasporogenesis, 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	1	2	1	2	2	1	2	1	2	2	2	1	1	2
Semester No	II	CO2	1	2	1	1	2	1	2	1	1	1	2	1	1	1	2
Teacher Name	Athavale Sir	CO3	1	2	1	2	1	1	2	1	2	2	2	2	2	2	1
Course Outcomes		CO4	2	1	2	1	2	2	1	2	1	1	1	1	1	1	2

CO1	Course contains vegetative and reproductive development of plant.	CO5	3	2	3	2	1	3	2	3	2	2	2	2	2	2	1
CO2	It also includes model systems like Fucus, and Arabidopsis	Average	1.80	1.60	1.80	1.40	1.60	1.80	1.60	1.80	1.40	1.60	1.80	1.60	1.40	1.40	1.60
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	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	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	The student will be able to learn Carbohydrate catabolism, and its association with cellular energy production, and carbohydrate anabolism in plants and animal cells.	CO5	2	2	1	2	1	2	2	1	2	1	2	1	2	2	1	
CO2	The student will be able to learn Lipid biosynthesis, acids and cholesterol, ketone bodies, acidosis, ketosis Degradation of fatty	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	
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.																	

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	This course increase the understanding of central dogma through DNA isolation and purification techniques.	CO5	2	2	1	2	1	2	2	1	2	1	2	1	2	2	1
	CO2	Along with this they will also learn protein estimation and separation methods.	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
	CO3	student will able to prepare reagent																
	CO4	student will able to study absorption spectra and quantitation of DNA, RNA and proteins																
	CO5	Student will able to separat proteins SDS-PAGE																

Class		SY BSc Biotech	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 226			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 understands methods of plant development and SAM, RAM through a) Dissection b) Sectioning c) Maceration d) Staining) Mounting.	CO5	2	2	1	2	1	2	2	1	2	1	2	1	2	2	1

	CO2	In Animal development, they understand different eggs, stages of egg development, effect of teratogen, life cycle of frog.	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
	CO3	Student will able to study development of male and female gametophytes																
	CO4	student will study different types of eggs																
	CO5	Student will able to study amphioxus development, observation of embryos, different development stages																

Academic Year :	2019-20
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Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb-331			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Microbial Biotechnology		CO1	2	2	3	2	2	2	1	2	2	1	1	1	2	1	2
Semester No	I		CO2	1	2	2	1	2	1	2	1	2	1	2	2	2	2	2
Teacher Name	Asmita gavhane		CO3	2	1	2	2	1	1	2	1	1	2	2	2	2	2	1
Course Outcomes			CO4	1	2	1	3	2	2	1	2	2	2	2	2	1	1	2
	CO1	Be able to recognize a familiarity with the wide diversity of microbes, and their potential for use in various fields of human life.	CO5	2	3	3	2	1	3	2	3	2	2	1	1	2	2	2
	CO2	Be able to demonstrate a knowledge of microbial growth and growth kinetics and their classification based on environment	Average	1.60	2.00	2.20	2.00	1.60	1.80	1.60	1.80	1.80	1.60	1.60	1.60	1.80	1.60	1.80
	CO3	Be able to demonstrate familiarity with methods of immobilization techniques and their wide applications by using microbes and their enzymes																
	CO4	Be able to understand role of beneficial bacteria to human health as normal flora and harmful microbes as pathogens.																
	CO5	Be able to demonstrate an understanding of various infections their cause, transmission ,diagnosis, preventive measures and treatment																

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

Course Outcomes		CO4	1	3	2	3	2	1	1	2	2	2	1	1	2	2	2
CO1	The students acquaint with principles, technical requirement, scientific and commercial applications in Plant tissue culture.	CO5	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
CO2	support methodologies in plant tissue/cell culture to plant improvement,	Average	1.40	1.80	1.40	2.00	1.40	1.40	1.60	1.60	2.00	1.80	1.20	1.60	1.40	1.80	1.80
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	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	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	Evaluate the role of micro-organisms in specific biotechnological processes.	CO5	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
CO2	To understand growth phase of microorganisms and effect of environment on growth.	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	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	Subject Name		Practicals in Tissue Culture	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Semester No	I	Teacher Name	Prashant katke and jyostna galande	CO1	1	3	2	3	2	1	1	2	2	2	1	1	2	2	2
				CO2	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
				CO3	2	1	1	2	1	1	2	2	2	2	1	1	2	2	2
				CO4	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
	CO1	The students become familiar with equipment used in animal and plant tissue culture.	CO5	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	
	CO2	The students become familiar with aseptic techniques,stock preparation, media preparation used in animal and plant tissue culture	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	The students will understand the safety procedures need for tissue culture.																	
	CO4	The student will learn different tissue culture techniques as callus and suspension culture																	
	CO5	The student will learn effect of different plant growth hormones																	

Class		T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs			
Subject Code	Bb- 335	Subject Name		Practicals in microbial biotechnology,field studies and report writing	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Semester No	I	Teacher Name	Prashant katke and Asmita Gavhane	CO1	1	3	2	3	2	1	1	2	2	2	1	1	2	2	2
				CO2	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
				CO3	2	1	1	2	1	1	2	2	2	2	1	1	2	2	2
				CO4	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2
	CO1	To learn about growth cycle of bacteria and growth kinetics	CO5	1	2	1	2	2	1	2	1	3	2	1	2	1	2	2	

	CO2	To study effect of different environmental factors on bacterial growth	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	To learn about food spillage causing microorganisms																
	CO4	To learn grading of milk and water testing for potability																
	CO5	Field visit to local forest ecosystem to conduct calculation of species diversity, richness and abundance from the field visit, point count for insect diversity, and quadrat method for plant diversity study																

Class	T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs			
Subject Code	Bb-341	Course Outcomes	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																	

Class	T.Y.B.Sc.Biotechnology	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Bb- 342	Course Outcomes	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																	

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	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
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	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1
	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	To learn gene transfer process and restriction mapping																

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
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CO-PO Mapping

CO-PO ATTAIN

	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
FY	FY	1	BBt- 101	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60		
		2	BBt- 102	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.40	1.60	
		3	BBt-103	1.40	1.60	1.60	1.60	1.60	1.60	1.40	1.60	1.40	1.60	1.40	
		4	BBt 104	1.40	1.40	1.40	1.60	1.40	1.40	1.40	1.60	1.80	1.40	1.60	1.60
		5	BBt- 105	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60
		6	BBt-106	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60
		7	BBt-107	2.20	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60
		8	BBt-108	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60
		9	BBt-201	2.20	1.60	1.60	1.60	1.60	1.40	1.60	1.40	1.80	1.40	1.40	1.60
		10	BBt- 208	1.60	1.80	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.80
		11	BBt-202	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60
		12	BBt 203	2.20	1.60	1.60	1.40	1.60	1.40	1.60	1.40	1.60	1.40	1.40	1.60
		13	BBt- 204	1.60	1.80	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.80
		14	BBt-205	1.60	1.80	1.40	1.60	1.40	1.60	1.40	1.40	1.60	1.40	1.60	1.80
SY	SY	1	Bb- 211	1.40	1.60	1.80	1.60	1.40	1.60	1.80	1.40	1.60	1.60	1.60	
		2	Bb- 212	1.60	2.00	2.20	2.00	1.60	1.80	1.60	1.80	1.80	1.60	1.60	
		3	Bb- 213	1.60	1.60	1.60	1.60	1.20	2.00	1.40	1.80	1.80	1.20	1.80	1.60
		4	Bb- 221	1.60	1.60	1.60	1.60	1.20	2.00	1.40	1.80	1.80	1.20	1.80	1.60
		5	#REF!	2.20	2.00	1.60	1.80	1.60	1.80	1.40	1.60	1.80	1.60	1.40	1.80
		6	Bb- 223	1.80	1.60	1.80	1.40	1.60	1.80	1.60	1.80	1.40	1.60	1.80	1.60
		7	Bb- 224	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	2.00	2.20	2.00	1.60	1.80	1.60	1.80	1.60	1.60	1.60	
		2	Bb-332	1.40	1.80	1.40	2.00	1.40	1.40	1.60	1.60	2.00	1.80	1.20	1.60
		3	Bb- 333	1.20	2.00	1.20	2.20	1.80	1.00	1.80	1.40	2.60	2.00	1.00	1.60
		4	I	1.40	1.80	1.40	2.00	1.40	1.40	1.60	1.60	2.00	1.80	1.20	1.60
		5	I	1.20	2.00	1.20	2.20	1.80	1.00	1.80	1.40	2.60	2.00	1.00	1.60

PO1	PO2	PO3	PO4	PO5	PO6
1.144	0.832	0.832	0.728	0.832	0.728
1.290667	0.821333	0.938667	0.821333	0.938667	0.821333
0.914667	1.045333	1.045333	1.045333	1.045333	1.045333
1.008	1.008	1.008	1.152	1.008	1.008
2.082667	1.325333	1.514667	1.325333	1.514667	1.325333
2.229333	1.621333	1.621333	1.418667	1.621333	1.418667
2.024	1.288	1.472	1.288	1.472	1.288
2.170667	1.578667	1.578667	1.381333	1.578667	1.381333
3.373333	2.453333	2.453333	2.453333	2.453333	2.146667
2.304	2.592	2.016	2.304	2.016	2.304
2.610667	1.898667	1.898667	1.661333	1.898667	1.661333
3.109333	2.261333	2.261333	1.978667	2.261333	1.978667
2.88	3.24	2.52	2.88	2.52	2.88
2.88	3.24	2.52	2.88	2.52	2.88
1.848	2.112	2.376	2.112	1.848	2.112
1.941333	2.426667	2.669333	2.426667	1.941333	2.184
2.112	2.112	2.112	2.112	1.584	2.64
2.112	2.112	2.112	2.112	1.584	2.64
2.669333	2.426667	1.941333	2.184	1.941333	2.184
2.376	2.112	2.376	1.848	2.112	2.376
2.453333	2.453333	2.453333	2.453333	1.84	3.066667
2.112	2.64	2.904	2.64	2.112	2.376
1.848	2.376	1.848	2.64	1.848	1.848
1.584	2.64	1.584	2.904	2.376	1.32
2.52	3.24	2.52	3.6	2.52	2.52
1.584	2.64	1.584	2.904	2.376	1.32

MENT

Percentage CO-PO ATTAINMENT

PO7	PO8	PO9	PO10	PO11	PO12
0.832	0.728	0.832	0.728	0.728	0.832
0.938667	0.821333	0.938667	0.821333	0.821333	0.938667
1.045333	0.914667	1.045333	0.914667	1.045333	0.914667
1.008	1.152	1.296	1.008	1.152	1.152
1.514667	1.325333	1.514667	1.325333	1.325333	1.514667
1.621333	1.418667	1.621333	1.418667	1.418667	1.621333
1.472	1.288	1.472	1.288	1.288	1.472
1.578667	1.381333	1.578667	1.381333	1.381333	1.578667
2.453333	2.146667	2.76	2.146667	2.146667	2.453333
2.016	2.016	2.304	2.016	2.304	2.592
1.898667	1.661333	1.898667	1.661333	1.661333	1.898667
2.261333	1.978667	2.261333	1.978667	1.978667	2.261333
2.52	2.52	2.88	2.52	2.88	3.24
2.52	2.52	2.88	2.52	2.88	3.24
2.376	1.848	2.112	2.376	2.112	2.112
1.941333	2.184	2.184	1.941333	1.941333	1.941333
1.848	2.376	2.376	1.584	2.376	2.112
1.848	2.376	2.376	1.584	2.376	2.112
1.698667	1.941333	2.184	1.941333	1.698667	2.184
2.112	2.376	1.848	2.112	2.376	2.112
2.146667	2.76	2.76	1.84	2.76	2.453333
2.112	2.376	2.376	2.112	2.112	2.112
2.112	2.112	2.64	2.376	1.584	2.112
2.376	1.848	3.432	2.64	1.32	2.112
2.88	2.88	3.6	3.24	2.16	2.88
2.376	1.848	3.432	2.64	1.32	2.112

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
52	52	52	52	52	52	52	52	52
58.6666667	58.6666667	58.6666667	58.6666667	58.6666667	58.6666667	58.6666667	58.6666667	58.6666667
65.3333333	65.3333333	65.3333333	65.3333333	65.3333333	65.3333333	65.3333333	65.3333333	65.3333333
72	72	72	72	72	72	72	72	72
94.6666667	94.6666667	94.6666667	94.6666667	94.6666667	94.6666667	94.6666667	94.6666667	94.6666667
101.3333333	101.3333333	101.3333333	101.3333333	101.3333333	101.3333333	101.3333333	101.3333333	101.3333333
92	92	92	92	92	92	92	92	92
98.6666667	98.6666667	98.6666667	98.6666667	98.6666667	98.6666667	98.6666667	98.6666667	98.6666667
153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333
144	144	144	144	144	144	144	144	144
118.6666667	118.6666667	118.6666667	118.6666667	118.6666667	118.6666667	118.6666667	118.6666667	118.6666667
141.3333333	141.3333333	141.3333333	141.3333333	141.3333333	141.3333333	141.3333333	141.3333333	141.3333333
180	180	180	180	180	180	180	180	180
180	180	180	180	180	180	180	180	180
132	132	132	132	132	132	132	132	132
121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333
132	132	132	132	132	132	132	132	132
132	132	132	132	132	132	132	132	132
121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333	121.3333333
132	132	132	132	132	132	132	132	132
153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333	153.3333333
132	132	132	132	132	132	132	132	132
132	132	132	132	132	132	132	132	132
132	132	132	132	132	132	132	132	132
180	180	180	180	180	180	180	180	180
132	132	132	132	132	132	132	132	132



PO10	PO11	PO12
52	52	52
58.66666667	58.66666667	58.66666667
65.33333333	65.33333333	65.33333333
72	72	72
94.66666667	94.66666667	94.66666667
101.33333333	101.33333333	101.33333333
92	92	92
98.66666667	98.66666667	98.66666667
153.33333333	153.33333333	153.33333333
144	144	144
118.66666667	118.66666667	118.66666667
141.33333333	141.33333333	141.33333333
180	180	180
180	180	180
132	132	132
121.33333333	121.33333333	121.33333333
132	132	132
132	132	132
121.33333333	121.33333333	121.33333333
132	132	132
153.33333333	153.33333333	153.33333333
132	132	132
132	132	132
132	132	132
180	180	180
132	132	132

FY
SY
TY

CO-PSO MAPPING

	Course	PSO1	PSO2	PSO3
1	BBt- 101	1.40	1.60	1.40
2	BBt- 102	1.40	1.60	1.40
3	BBt-103	1.40	1.60	1.60
4	BBt 104	2.00	1.60	1.60
5	BBt- 105	1.40	1.60	1.40
6	BBt-106	1.40	1.60	1.40
7	BBt-107	1.40	1.60	1.40
8	BBt-108	1.40	1.60	1.40
9	BBt-201	1.40	1.60	1.40
10	BBt- 208	1.40	1.20	1.50
11	BBt-202	1.40	1.60	1.40
12	BBt 203	1.40	1.60	1.40
13	BBt- 204	1.40	1.20	1.50
14	BBt-205	1.40	1.20	1.50
1	Bb- 211	1.40	1.60	1.80
2	Bb- 212	1.80	1.60	1.80
3	Bb- 213	1.40	1.60	1.40
4	Bb- 221	1.40	1.60	1.40
5	Bb- 221	1.60	1.80	1.40
6	Bb- 223	1.40	1.40	1.60
7	Bb- 224	1.40	1.60	1.40
1	Bb-331	1.80	1.60	1.80
2	Bb-332	1.40	1.80	1.80
3	Bb- 333	1.40	2.00	2.00
4	I	0.00	0.00	0.00
5	I	0.00	0.00	0.00

CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	BBt- 101	0.728	0.832	0.728
	BBt- 102	0.821333	0.938667	0.821333
	BBt-103	0.914667	1.045333	1.045333
	BBt 104	1.44	1.152	1.152
	BBt- 105	1.325333	1.514667	1.325333
	BBt-106	1.418667	1.621333	1.418667
	BBt-107	1.288	1.472	1.288
	BBt-108	1.381333	1.578667	1.381333
	BBt-201	2.146667	2.453333	2.146667
	BBt- 208	2.016	1.728	2.16
	BBt-202	1.661333	1.898667	1.661333
	BBt 203	1.978667	2.261333	1.978667
	BBt- 204	2.52	2.16	2.7
	BBt-205	2.52	2.16	2.7
	Bb- 211	1.848	2.112	2.376
	Bb- 212	2.184	1.941333	2.184
	Bb- 213	1.848	2.112	1.848
	Bb- 221	1.848	2.112	1.848
	Bb- 221	1.941333	2.184	1.698667
	Bb- 223	1.848	1.848	2.112
	Bb- 224	2.146667	2.453333	2.146667
	Bb-331	2.376	2.112	2.376
	Bb-332	1.848	2.376	2.376
	Bb- 333	1.848	2.64	2.64
	I	0	0	0
	I	0	0	0

Percentage CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	BBt- 101	52	52	52
	BBt- 102	58.66667	58.66667	58.66667
	BBt-103	65.33333	65.33333	65.33333
	BBt 104	72	72	72
	BBt- 105	94.66667	94.66667	94.66667
	BBt-106	101.3333	101.3333	101.3333
	BBt-107	92	92	92
	BBt-108	98.66667	98.66667	98.66667
	BBt-201	153.3333	153.3333	153.3333
	BBt- 208	144	144	144
	BBt-202	118.6667	118.6667	118.6667
	BBt 203	141.3333	141.3333	141.3333
	BBt- 204	180	180	180
	BBt-205	180	180	180
	Bb- 211	132	132	132
	Bb- 212	121.3333	121.3333	121.3333
	Bb- 213	132	132	132
	Bb- 221	132	132	132
	Bb- 221	121.3333	121.3333	121.3333
	Bb- 223	132	132	132
	Bb- 224	153.3333	153.3333	153.3333
	Bb-331	132	132	132
	Bb-332	132	132	132
	Bb- 333	132	132	132
	I	#DIV/0!	#DIV/0!	#DIV/0!
	I	#DIV/0!	#DIV/0!	#DIV/0!