PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMILNADU

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.Sc. BIOTECHNOLOGY CURRICULUM

REGULATION 2019

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.sc., CURRICULUM - REGULATION-2019

B.sc., Graduate Attributes

- **Research, inquiry and analytical thinking abilities.**
- **Capability and motivation for intellectual development.**
- **Ethical, social and professional understanding.**
- **Communication in intra and inter disciplinary**
- **Teamwork, collaborative and management skills in scientific research**
- **Information literacy in respective discipline**

B.sc., Program Educational Objectives PEO

- **PEO 1** : To obtain detailed information about the fundamentals of Biotechnology, allied subjects and life skills.
- **PEO 2** : To provide information about the molecular methods which involved in cellular processes of living systems such as microbes to higher order organisms for applied aspects. To address the emerging need for skilled scientific manpower with research ethics involving organisms.
- **PEO 3** : To impart the basics and current molecular tools in the areas of Molecular Diagnostics, Fermentation Technology, Plant, Animal & Environmental Biotechnology are included to train the students for man power development and also sensitize them to scope for research. The practical subjects will provide information about the careers in the industry and applied research where biological system is employed.
- **PEO 4** : To make the graduates of Biotechnology to learn and to adopt in a competitive world of technology update and contribute to all forms of life
- **PEO5-** To enable them to excute a research objective through experimentation

B.Sc., Programme Specific Outcome (PSO)

- PSO1-Graduates will exhibit contemporary knowledge in Biotechnology and students will be eligible for doing jobs in pharmaceutical and biotechnological Industry.
- PSO2-An expert in biotechnology and allied fields (medical, microbial, agricultural, environmental, plant and animal) for utilizing the practical skill to address biotechnological challenges.

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

- **PSO3**- Graduates will be able to work individually as well as in team to survive in multidisciplinary environment.
- **PSO4**- If students will engage themselves in the process of effective learning, it will give opportunities to utilize acquired knowledge for the catering the needs of science and technology as well as for the betterment of human mankind.
- **PSO5**-Graduates will be able to understand the potentials, and impact of biotechnological innovations on environment and their implementation for finding sustainable solution to issues pertaining to environment, health sector, agriculture, etc.

B.sc., Program Outcome PO

- **PO1**-Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life
- **PO2**-Understanding and better knowledge of the causes, types and control methods for environmental pollution by the students.
- **PO3**-The student will be able to discuss the mechanisms associated with gene expression system in prokaryotes and eukaryotes.
- **PO4**-Developed various communication skills such as reading, listening, speaking etc.,
- **PO5**-Aequired the skills in handling scientific instruments, planning and performing in laboratory experiments
- **PO6**-Ethics: Convey and practice social, environmental and biological ethics.
- **PO7**-To get knowledge about research tools and learn to do review literature. Ability to carry out independent literature survey corresponding to the specific publications type and asses basic research tool

B.Sc., Biotechnology (C)

C1- Fundamentals of Biological System
C2- Fundamentals of Biological System Lab
C3- Biological Chemistry
C4- Biological Chemistry Lab
C5-Cell Biology and Genetics
C6- Cell Biology and Genetics Lab
C7- Microbiology
C8- Microbiology Lab
C9- Research LED Seminar
C10-Plant Physiology
C11-Plant Physiology Lab
C12- Immunology
C13- Immunology Lab
C14- Research Methodology
C15- Animal Physiology
C16- Animal Physiology Lab
C17- Bioinformatics and Biostatistics
C18- Bioinformatics and Biostatistics Lab

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

C19- Development Biology
C20- Cell and Tissue Culture
C21- Enzyme and Enzyme Technology
C22- Development Biology, Tissue Culture Lab
C23- Enzyme and Enzyme Technology Lab
C24-Discipline Specific Elective
C25- Plant and animal Biotechnology
C26- Applied Biotechnology
C27- Plant, Animal and Applied Biotechnology Lab
C28- Environmental Biotechnology Lab
C29- Discipline Specific Elective
C30-Package lab- I-VI
C31- Communicative English Labl-VI

B.sc., Curriculum Mapping

Programme Educational objectives Vs Programme Outcome

Programme Outcome PO Programme specific outcome PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
PSO1	*	*		*	*	*	*
PSO2			*		*	*	*
PSO3	*	*	*		*		
PSO4	*	*	*			*	*
PSO5	*		*	*	*		*

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

B.Sc Biotechnology Curriculum Mapping

Programme Outcome Vs Course Outcome

Programme Outcome- PO Courses Outcome-CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	*	*	*	*	*	*	*
CO2	*	*	*	*	*	*	*
CO3	*	*	*	*	*	*	*
CO4	*	*	*	*	*	*	*
CO5	*	*	*	*	*	*	*
CO6	*	*	*	*	*	*	*
CO7				*	*	*	*
CO8	*	*	*	*	*	*	*
CO9				*	*	*	*
CO10	*	*	*	*	*	*	*
CO11			*	*	*	*	*
CO12	*	*	*	*	*	*	*
CO13	*	*	*	*	*	*	*
CO14	*	*	*	*	*	*	*
CO15	*	*	*	*	*	*	*
CO16	*	*	*	*	*	*	*
CO17	*	*	*	*	*	*	*
CO18	*	*	*	*	*	*	*
CO19	*	*	*	*	*	*	*
CO20				*	*	*	*
CO21	*	*	*	*	*	*	*

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

CO22				*	*	*	*
CO23	*	*	*	*	*	*	*
CO24			*	*	*	*	*
CO25	*	*	*	*	*	*	*
CO26	*	*	*	*	*	*	*
CO27	*	*	*	*	*	*	*
CO28	*	*	*	*	*	*	*
CO29	*	*	*	*	*	*	*
CO30	*	*	*	*	*	*	*
CO31	*	*	*	*	*	*	*

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMILNADU

School of Arts and Science
Department of Biotechnology
19UGBTGEC
2019 Regulation
Program Outcomes and Course outcomes of
B.Sc., Mapping of COs and Pos

Semester	Course Code	Title of the Course	Cos	POS						
				PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7
I	19110AEC11	Language-I (Tamil-I)	CO1 - Learn the changes that have occurred in literature since the classical period.	3	0	2	1	2	0	2
			CO2 - Make use of vocabulary systematically.	2	1	2	0	1	2	3
			CO3 - Understand how to lead one's life realizing the modernity and its environment/atmosphere.	3	2	1	0	2	2	1
I	19111AEC11	Advanced English-I	CO1 - Develop vocabulary	1	2	2	0	3	1	2
			CO2 - Learn to edit and do proof reading	1	2	0	3	2	0	1
			CO3 - Read and comprehend literature	1	1	2	0	1	2	3
I	19111AEC12	English-I	CO1 - Read and comprehend literature	2	1	2	3	0	3	2
			CO2 - Appreciate poetry and prose	3	0	1	2	2	2	3

			CO3 - Familiarize students with fiction.	**0**	**1**	**2**	**1**	**3**	**0**	**3**
I	19117AEC13	Fundamentals of Biological system	CO1 - Understand the physical, chemical, and mathematical basis of biology	2	0	3	1	2	0	3
			CO2 - Appreciate the different scales of biological systems	2	3	0	3	2	2	1
			CO3 - To understand the Basics in life sciences, evolution and organization of life, living and non-living things	3	2	2	3	2	3	1
			CO4 - To understand the basics of biomolecules, carbohydrates, proteins, lipids and Nucleic acids	1	1	2	3	3	2	1
I	19117AEC15L	Fundamentals of Biological system Lab	CO1 - The learners will acquire knowledge on the structure and functions relationship of biological system and as well their roll in various biological process	3	3	2	1	0	2	3
			CO2 - To know the cellular organization of life, cell theory- cell organization-cell organelles- plant and animal cell	1	2	3	1	1	2	2
			CO3 - To understanding the basic fundamentals of Biological System	2	1	1	3	2	1	2
I	19115AEC15A	Biological Chemistry	CO1 - The learners will acquire knowledge on the structure and functions relationship of proteins nucleic acid carbohydrates and as well their roll in various biological process	1	1	2	0	2	2	3
			CO2 - They study the influence and role of structure in reactivity of biomolecules	1	2	2	3	1	2	3
			CO3 - Through this course the students are exposed to importance of biological macromolecules	1	2	1	1	2	1	2

I	19115AEC16AL	Biological Chemistry Lab	CO1 - Students will use current biochemical and molecular techniques to plan and carry out experiments.	3	2	0	2	3	1	2
			CO2 - Biochemistry Majors will gain proficiency in basic laboratory techniques in both chemistry and biology, and be able to apply the scientific method to the processes of experimentation and hypothesis testing	3	0	1	1	2	2	3
			CO3 - At the end of the course, the students have a thorough understanding on the role of biomolecules and their functions	1	2	3	1	2	3	3
I	19120SEC01A	Skill Based Elective-I	CO1 - Recognize when to use each of the Microsoft Office programs to create professional and academic documents.	3	2	1	0	2	1	0
			CO2 - Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.	3	2	0	2	1	1	2
			CO3 - Apply skills and concepts for basic use of computer hardware, software, networks, and the Internet in the workplace and in future coursework as identified by the internationally accepted Internet and Computing Core (IC3) standards.	2	0	1	1	2	2	3
I	19111SEC01L	Communicative English Lab-I	CO1 - Learn grammar.	1	1	2	0	1	2	3
			CO2 - Enrich vocabulary	2	0	3	2	1	0	1
			CO3 - Understand the process of communication	3	2	0	1	0	2	1
			CO4 - Develop listening skill	1	3	0	1	0	2	2
I	191INDCONS	Indian Constitution	CO1 - Democratic values and citizenship Training and gained	3	2	1	0	2	3	1
			CO2 - Awareness on fundamental Rights are established	3	1	1	2	2	3	0
			CO3 - The functions of union Government and State Government are learnt	2	3	2	1	2	3	3

			CO4 - The Power and functions of the Judiciary learnt thoroughly	2	1	0	1	2	2	3
			CO5 - Appreciation of Democratic Parliamentary Rule is learnt	1	2	0	2	1	2	0
II	19110AEC21	Language-II (Tamil-II)	CO1 - Know what devotion really is.	1	1	2	0	1	2	3
			CO2 - Know the fruitfulness obtained through devotion	1	2	2	0	1	1	2
			CO3 - Perceive the progress achieved in the society through devotion.	1	3	0	2	1	1	2
II	19111AEC21	Advanced English-II	CO1 - Develop technological skills.	1	2	0	2	1	1	2
			CO2 - Able to write in a variety of formats	1	1	2	2	0	1	2
			CO3 - Read biographies and develop personality	1	1	1	2	0	2	3
II	19111AEC22	English-II	CO1 - Appreciate different forms of literature	2	0	2	2	1	1	1
			CO2 - Acquire language skills through literature	1	2	3	1	0	2	1
			CO3 - Broadens the horizon of knowledge	1	3	2	1	0	1	2
II	19117AEC23	Cell Biology and Genetics	CO1 - This paper will enable the students to learn the basics and lay strong foundation in understanding the composition of cells, how cells works is fundamental to living systems.	1	2	2	3	0	3	2
			CO2 - The course outcome is to train the students in understanding genetics and relate modern DNA technology for disease diagnostics and therapy	1	2	1	0	1	1	2
			CO3 - Students will be taught Mendelian genetics, their principles and gene interaction.	3	2	1	0	2	3	3

			CO4 - This gives them a strong foundation on the basic unit of life.	2	1	2	3	1	2	3
II	19117AEC24L	Cell Biology and Genetics lab	CO1 - Able to isolate the DNA, identify and distinguish different blood cells, to solve simple genetic problems and analyze Human karyotype	1	2	2	1	2	1	2
			CO2 - The course teaches the students about genes at molecular level	2	2	3	0	3	2	1
			CO3 - They learn about DNA, RNA and their replication, mutations, DNA repair mechanism	1	2	2	3	2	0	1
II	19116AEC25	Microbiology	CO1 - This fundamental paper discusses the importance of microorganisms	1	1	1	0	3	3	2
			CO2 - The course throws light on types of microorganisms in and around humans	2	3	0	1	2	1	2
			CO3 - At the end of the course, the student has understanding on the metabolism and mechanism of microbial life	2	3	0	3	2	1	1
			CO4 - Gain knowledge about metabolism.	2	2	0	3	2	3	1
II	19116AEC26L	Microbiology lab	CO1 - Develop basic skill in aseptic techniques	3	2	1	0	2	2	1
			CO2 - Understand various accessories for microbiology practical's	1	2	0	2	3	2	1
			CO3 - Perform various staining techniques	2	2	1	0	2	2	2
			CO4 - Cultivate bacteria with different cultivation technique	2	1	0	2	3	1	2
II	19117RLC27	Research LED	CO1 - Exposure to various research domains	2	1	2	0	3	1	1

		Seminar	CO2 - Acquaintance with languages of research	2	0	2	3	3	2	1
			CO3 - Development of research aptitude	2	1	1	0	1	2	3
II	19120SEC02A	Skill Based Elective – II	CO1 - Identify the names and functions of the PowerPoint interface.	1	2	0	2	1	3	2
			CO2 - Create, edit, save, and print presentations.	1	2	1	0	1	0	3
			CO3 - Format presentations.	3	2	0	1	2	3	2
			CO4 - Add a graphic to a presentation.	2	3	3	2	0	1	2
			CO5 - Create and manipulate a simple slideshow with outlines and notes.	1	2	1	0	1	2	3
			CO6 - Create slide presentations that include text, graphics, animation, and transitions.	1	2	3	1	0	2	3
II	19111SEC02L	Communicative English Lab-II	CO1 - Learn grammar.	1	2	1	1	0	2	3
			CO2 - Use a variety of reading strategies	1	2	0	1	2	3	2
			CO3 - Enhance the skill of making grammatically correct sentences.	1	1	2	3	2	0	1
III	19110AEC31	Language-III (Tamil-III)	CO1 - Achieve one's goal by following the ancestral path	2	1	2	0	3	2	1
			CO2 - Learn to lead life of perfection by realizing the uncertainty in the life	3	2	1	1	2	0	2
			CO3 - Attain happiness through honesty	2	3	2	3	0	1	2
III	19111AEC31	Advanced English-III	CO1 - Understand phonetics.	2	1	0	2	3	1	2

			CO2 - Develop writing skill	3	2	1	2	0	2	1
			CO3 - Able to develop creative writing	2	1	2	0	1	1	1
III	19111AEC32	English-III	CO1 - Enable to appreciate different types of prose	2	1	0	2	1	3	2
			CO2 - Develop the conversational skills through one-act plays	2	0	3	2	1	2	3
			CO3 - Enhance the skill of making grammatically correct sentences.	2	3	2	1	0	1	1
III	19117AEC33	Plant Physiology	CO1 - Impart an insight into the various plant water relations	0	1	2	1	1	1	1
			CO2 - Learning about the mineral nutrition in plants	3	0	1	2	3	2	1
			CO3 - Understand the mechanism of various metabolic processes in plants	1	2	2	0	2	1	1
			CO4 - Understand the respiration in higher plants with particular emphasis on aerobic and anaerobic respiration.	2	0	3	1	1	2	2
III	19117AEC34L	Plant physiology Lab	CO1 - Equip students with skills and techniques related to plant physiology so that they can design their own experiments	1	2	1	3	3	2	1
			CO2 - Learn about the movement of sap and absorption of water in plant body.	1	2	3	0	2	1	3
			CO3 - Understand the plant movements	1	2	3	2	1	1	2
III	19117AEC35	Immunology	CO1 - The students may understand the immune system, its components and various techniques used in bio manipulation.	1	2	1	2	3	1	2

			CO2 - This course gives an overview on the immune system including organs, cells and receptors	3	2	1	3	2	0	2
			CO3 - The students learns about molecular basis of antigen recognition, hypersensitivity reaction, antigen-antibody reactions	3	0	3	2	1	1	2
			CO4 - The course develops in the student an appreciation for principles of immunology and its applications in treating human diseases	3	2	1	0	3	2	1
III	19117AEC36L	Immunology Lab	CO1 - Identify the structure, function, and characteristics of immunoglobulins.	1	2	0	3	2	1	1
			CO2 - Explain the principles of and perform serological tests.	2	3	1	2	3	0	2
			CO3 - It's a paper which accomplishes the learning of techniques involved in understanding the immunological aspects of physiology and biological samples	3	3	0	2	1	2	2
III	19117RMC37	Research Methodology	CO1 - Understanding research questions and tools	1	2	3	2	3	3	1
			CO2 - Experience in scientific writings	2	1	2	3	0	2	3
			CO3 - Practice in various aspects of scientific publications	2	0	1	2	1	2	3
			CO4 - Inculcation of research ethics	2	1	2	0	2	1	3
III	19120SEC03A	Skill based Elective-III	CO1 - Indicate the names and functions of the Excel interface components.	2	3	1	3	0	3	3
			CO2 - Enter and edit data.	2	1	2	2	0	1	2
			CO3 - Format data and cells.	1	2	0	1	1	1	2

			CO4 - Construct formulas, including the use of built-in functions, and relative and absolute references.	2	3	1	1	1	0	2
			CO5 - Create and modify charts.	1	2	0	1	1	1	2
			CO6 - Preview and print worksheets	1	2	2	0	1	2	3
III	19111SEC03L	Communicative English Lab-III	CO1 - Learn grammar.	1	2	0	1	1	1	2
			CO2 - Enhance their fluency in English	0	0	0	3	0	0	0
			CO3 - Develop speaking and writing skills	1	2	1	1	0	1	2
			CO4 - Develop individual perspectives that demonstrate critical thinking skills	1	0	1	1	0	1	1
IV	19110AEC41	Language-IV (Tamil-IV)	CO1 - Realize how the ancient people changed their lifestyle according to the ages	1	2	0	1	1	1	0
			CO2 - Learn how to change one's lifestyle according to the needs of the future	1	1	0	2	2	1	1
			CO3 - Accept the modern trends and its uses	1	1	0	2	1	2	1
IV	19111AEC41	Advanced English-IV	CO1 - Develop writing skill.	1	0	2	1	2	2	1
			CO2 - Comprehend and describe poems	1	2	1	1	0	1	2
			CO3 - Learn interviewing skills	1	2	0	1	1	2	2
IV	19111AEC42	English-IV	CO1 - Improve their ability to read and understand them	2	1	0	1	1	1	1
			CO2 - Know the genius of Shakespeare	2	1	0	1	0	1	2

			CO3 - Express in writing their views.	1	1	2	1	2		1
IV	19117AEC43	Animal physiology	CO1 - To provide advanced undergraduate and introductory graduate students with a comprehensive overview of animal physiology from molecular, cellular and whole animal systems approaches.	1	0	2	2	0	2	0
			CO2 - To critically evaluate clinical and research case problems relating to endocrinology and cell biology.	1	1	1	1	1	0	1
IV	19117AEC44L	Animal Physiology Lab	CO1 - Have an enhanced knowledge and appreciation of mammalian physiology	3	3	2	1	3	0	3
			CO2 - Understand the functions of important physiological systems including the cardiorespiratory, renal, reproductive and metabolic systems	2	1	2	3	0	2	2
			CO3 - It trains the students with essentiality of molecules, cells, tissues and organs involved in the defense mechanism	1	2	3	3	2	1	3
IV	19117AEC45	Bioinformatics and biostatistics	CO1 - Know the applications and limitations of different bioinformatics and statistical methods.	2	1	2	3	2	1	2
			CO2 - Be able to perform and interpret bioinformatics and statistical analyses with real molecular biology data.	2	3	3	2	0	1	1
			CO3 - Be able to describe statistical methods and probability distributions relevant for molecular biology data.	3	3	0	3	2	1	2
IV	19117AEC46L	Bioinformatics and Biostatistics	CO1 - This laboratory course will prepare the students for various applications of bioinformatics in life science research.	1	2	2	3	3	2	1

		Lab	CO2 - The student will be able to apply basic principles of biology, computer science and mathematics to address complex biological problems	1	2	3	2	0	1	2
			CO3 - This course imparts the knowledge of basic statistical methods to solve problems	1	3	0	2	1	1	2
IV	19120SEC04A	Skill based Elective-IV	CO1 - Examine database concepts and explore the Microsoft Office Access environment.	1	2	0	2	1	0	2
			CO2 - Design a simple database.	1	1	1	0	1	2	2
			CO3 - Build a new database with related tables.	2	2	3	2	3	1	2
			CO4 - Manage the data in a table.	2	1	1	2	3	1	1
			CO5 - Query a database using different methods.	1	2	0	1	1	2	1
			CO6 - Design a form.	1	0	2	1	0	1	2
			CO7 - Generate a report.	2	1	3	0	2	0	1
			CO8 - Import and export data.	1	1	0	1	1	1	1
IV	19111SEC04L	Communicative English Lab-IV	CO1 - Learn grammar	1	2	0	1	2	0	1
			CO2 - Enable to express their views in conversation	0	1	2	1	0	1	1
			CO3 - Develop soft skills	1	0	1	2	1	1	1
			CO4 - Enhance presentation skills	1	2	0	1	2	1	1
IV	191ENVTSTU	Environmental	CO1 - Understand ecosystem	2	0	1	1	1	0	1

		Studies	CO2 - Know social issues and the environment	1	1	0	1	2	1	1
			CO3 - Learn keep the environment eco-friendly	1	1	2	1	0	1	1
V	19117AEC51	Developmental Biology	CO1 - Be able to list the types of characteristics that make an organism ideal for the study of developmental biology	1	2	0	1	1	0	1
			CO2 - Be familiar with the events that lead up to and comprise the process of fertilization.	1	2	0	1	1	1	1
			CO3 - Be able to compare and contrast the process of gastrulation in the various model organisms discussed	1	2	3	0	3	3	2
V	19117SEC52	Cell and Tissue culture	CO1 - Fundamentals of plant tissue culture. Plant regeneration and organogenesis. Embryogenesis. Organ, anther and pollen culture. Ovary, ovule and embryo culture. Callus suspension culture.	3	1	1	0	1	2	1
			CO2 - Protoplast, isolation, culture and fusion.	3	2	1	0	2	1	3
			CO3 - Production of hybrids and cybrids.	2	3	3	1	2	0	2
V	19117AEC53	Enzyme and enzyme technology	CO1 - The course will provide an overview of the key enzymes currently used in large scale industrial processes	1	2	2	0	1	2	3
			CO2 - This course includes the isolation, purification and characterization of enzymes and their applications	2	1	0	3	2	1	1
			CO3 - Discover the current and future trends of applying enzyme technology for the commercialization purpose of biotechnological products.	1	0	3	1	1	2	2
V	19117AEC54L	Developmental biology, tissue	CO1 - Demonstrate a basic understanding of developmental terms and mechanisms.	1	0	2	1	2	3	2

		culture lab	CO2 - Utilize laboratory techniques to design and carry-out experimental studies.	1	2	0	1	2	3	1
			CO3 - Conservation of endangered plant species	1	2	0	1	2	1	1
			CO4 - Molecular, pharmacological and biochemical investigations of different aspects of plant growth and development such as in vitro flowering.	2	1	3	2	1	1	3
V	19117AEC55L	Enzyme and Enzyme Technology Lab	CO1 - Distinguish the fundamentals of enzyme properties, nomenclatures, characteristics and mechanisms	3	2	0	2	1	2	3
			CO2 - Apply biochemical calculation for enzyme kinetics	1	2	3	0	1	2	3
			CO3 - Compare methods for production, purification, characterization and immobilization of enzymes	3	0	3	2	0	2	1
			CO4 - Discuss various application of enzymes that can benefit human life	3	2	2	1	3	0	1
V	19117DSC56A	Discipline Specific Elective -I rDNA Technology	CO1 - Utilize the knowledge on creation of a genomic library	3	2	1	0	2	1	3
			CO2 - Explain the significance of model organisms in recombinant DNA technology	2	0	2	3	2	1	2
			CO1 - This course teaches rDNA technology techniques and their application in the field of genetic engineering They learn about plasmids, vectors and gain knowledge on the construction of cDNA libraries	3	2	1	0	3	2	1
V	19117DSC56B	Molecular Biology	CO1 - Understand and apply the principles and techniques of molecular biology which prepares students for further education and/or employment in teaching, basic research or the health professions	1	2	3	0	1	2	1

			CO2 - Explain the concept of recombination, linkage mapping and elucidate the gene transfer mechanisms in prokaryotes and eukaryotes	2	1	1	1	2	0	3
			CO3 - Know the terms and terminologies related to molecular biology and microbial	2	3	3	2	2	0	1
V	19117BRC57	Participation in Bounded Research	CO1 - Hands on exposure to problem solving tools in contemporary research	1	2	3	3	2	2	3
			CO2 - Evolution of research intuitiveness and orientation	3	2	3	0	2	1	3
			CO3 - Familiarity with cutting edge research trends	1	2	2	1	2	3	1
V	19120SEC05A	Skill based Elective-V	CO1 - Work with the Photoshop workspace	2	1	1	2	1	2	1
			CO2 - Navigate images	1	2	1	0	3	2	1
			CO3 - Resize and crop images	1	3	2	1	1	2	3
			CO4 - Make and work with selections	1	3	1	0	3	2	1
			CO5 - Create new layers and perform other basic layer functions	1	1	2	1	2	0	1
			CO6 - Transform images	1	0	1	2	1	1	1
V	19111SEC05L	Communicative English Lab-V	CO1 - Develop corporate skills.	1	2	0	3	1	1	1
			CO2 - Handle their day to day affairs well with their knowledge of language skills.	1	1	1	1	1	0	1
			CO3 - Get a Job.	1	2	0	2	1	2	3

VI	19117AEC61	Plant and Animal Biotechnology	CO1 - This course teaches organization and expression of plant and animal genome and plant and animal tissue culture	1	1	2	1	0	1	1
			CO2 - Students learn about transgenic animal, their application in pharmaceutical industry, cloning and its importance.	1	1	0	3	2	1	1
			CO3 - This course prepares the students in appreciating the its benefits and applications in biotechnological, pharmaceutical, medical and agricultural field	1	2	1	1	1	0	3
VI	19117SEC62	Applied Biotechnology	CO1 - Evaluate and describe systems of product research, development, and production	1	2	1	1	0	2	2
			CO2 - Analyze the potential for commercialization for innovations within the biotechnology industry	1	1	0	1	1	0	1
			CO3 - The students will gain the basic knowledge of aquaculture and Students will solve a variety of problems using creative thinking skills and analytical skills in the lab.	1	2	1	0	1	2	1
VI	19117SEC63L	Plant, Animal and Applied Biotechnology Lab	CO1 - The students should have knowledge on biotechnological analysis and the utilization of these knowledge about procedures and utilization of such knowledge to combine biotechnological methods to obtain analytical results	1	2	3	0	2	1	1
			CO2 - The students will develop fundamental knowledge in Plant Molecular Biotechnology and its application in laboratory and industry settings.	1	2	3	1	1	0	2
			CO3 - Describe mechanisms of plant pollination and differentiate between haploid and diploid cells and their role in sexual reproduction	1	2	3	3	0	2	1

VI	19117AEC64L	Environmental Biotechnology Lab	CO1 - To present an overview of important environmental biotechnologies involved in treatment of pollutants and resource recovery	1	0	2	3	2	1	3
			CO2 - The students will be able to demonstrate the use of environmental science principle in solving various environmental problems	1	2	3	3	2	1	3
			CO3 - Describe the most commonly applied disinfection methods, and the steps typically involved in drinking water treatment process	3	1	1	0	2	1	2
VI	19117DSC65A	Discipline Specific Elective - II Environmental Biotechnology	CO1 - Biofuels: Advantages , Energy from biomass, Biogas, Biohydrogen, Biosafety • Toxicity Bio magnification, Threshold Dose, Factor Affecting Toxicity.	1	0	2	2	1	3	2
			CO2 - Students will gain about environmental pollutions, preventive measures.	2	1	3	2	1	3	1
			CO3 - Explain the microbial processes and growth requirements undelaying the activated sludge process, nitrification, denitrification, enhanced phosphorus removal, and anaerobic digestion	1	2	3	1	1	2	0
VI	19117DSC65B	Environmental Management	CO1 - The students in the course are exposed to the diversity, function, ecological adaptation of microorganisms within the environment	2	1	3	2	1	1	2
			CO2 - This course gives the importance of microbial life to key ecosystem process and teaches the role of biotechnology to address environmental issues	1	2	1	2	3	1	2
VI	19117PRW67	Project Work	CO1 - Understand basic concepts of research and its methodologies	1	2	3	2	1	1	3

			CO2 - Identify appropriate research problem and parameters	2	3	0	1	1	1	1
			CO3 - Prepare a research report	1	2	2	3	1	2	1
VI	19120SEC06A	Skill Based Elective – VI	CO1 - Learn to create animated graphics, add sound and interactivity.	1	0	2	1	2	1	1
			CO2 - Can develop Website	2	1	1	0	1	1	2
			CO3 - CD based presentations	3	2	0	2	1	2	1
VI	19111SEC06L	Communicative English Lab-VI	CO1 - Apply study skills	1	2	0	2	1	1	1
			CO2 - Widen creative thinking	0	2	2	1	1	2	1
			CO3 - Be a good team worker	1	2	0	2	1	1	2
			CO4 - Make them proficient in English	1	1	0	1	2	0	3

1- Low, 2-Medium, 3- Higher, 0 No correlation

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMILNADU

School of Arts and Science
Department of Biotechnology
19PGBTGEC
2019 Regulation
Program Outcomes and Course outcomes of
M.Sc., Mapping of COs and Pos

Semester	Course Code	Title of the Course	COs	POS					
				PO1	PO2	PO3	PO4	PO5	PO6
I	19217AEC11	General Microbiology	CO1 - Students can gain the idea of how to identify the microorganisms based on the modern polyphasic approach.	3	1	0	1	2	2
	19217AEC12	Molecular genetics	CO2 - After successful completion of the paper the students will get an overall view about genetic makeup of organisms and can take up a career in research.	2	0	0	1	2	2
	19217AEC13	Biochemistry	CO3 - This paper in biochemistry has been designed to provide the student with a firm foundation in the biochemical aspects of cellular functions which forms a base for their future research.	3	0	0	3	2	2
	19217SEC14L	Microbiology & Molecular Genetics Lab	CO1 - After successful completion of the paper the students will get an overall view about genetic makeup of organisms and can take up a career in research.	2	2	1	0	1	2

	19217DSC15A	Immunology	CO1 - This course will provide the student insights into the various aspects of Immunology such as classical immunology, clinical immunology, Immunotherapy and diagnostic immunology.	2	1	1	0	0	1
	19217DSC15B	Biosafety and Biodiversity	CO1 - To study the diversity of plants and animal life in a particular habitat, ethical issues and potential of biotechnology for the benefit of man kind	3	1	1	2	2	1
	19217RLS16	Research Led Seminar	CO1 - Exposure to various research domains	3	2	1	0	2	2
			CO2 - Acquaintance with languages of research	3	2	2	0	0	1
			CO3 - Development of research aptitude	2	1	1	2	2	1
II	19217AEC21	Cell & Molecular Biology	CO1 - Students after completion of this paper will be exceptionally well prepared to pursue careers in cellular and sub cellular biological research, biomedical research, or medicine or allied health fields.	2	1	1	1	1	1
	19217AEC22	Biophysics & Bioinformatics	CO2 - This paper has been designed to give the students comprehensive training in the emerging and exciting upcoming filed of Systems Biology, which will help students to get career in both industry/R&D.	2	1	1	2	1	1
	19217AEC23	Industrial Biotechnology	CO1 - This course is important in the era of industrialization leading to environmental hazards and hence will help students to take up a career in tackling industrial pollution and also to take up the research in areas like development of biological systems for remediation of contaminated environments (land, air, water), and for environment-friendly processes such as green manufacturing technologies and sustainable development.	2	1	0	1	1	1

	19217SEC24L	Molecular Biology & Industrial Biotechnology Lab	CO1 - Students after completion of this paper will be exceptionally well prepared to pursue careers in cellular and sub cellular biological research, biomedical research, or medicine or allied health fields	2	1	0	0	1	2
	19217DSC25A	Endocrynology	CO1 -To know the pathophysiological significance of the system with special reference to humans.	1	2	0	1	1	3
	19217DSC25B	Intellectual Property Rights	CO1 - To get registration in our country and foreign countries of their invention, designs and thesis or theory written by the students during their project work and for this they must have knowledge of patents, copy right, trademarks, designs and information Technology Act. Further teacher will have to demonstrate with products and ask the student to identify the different types of IPR'	2	2	1	1	2	2
	19217RMC26	Research Methodology	CO1 - Understanding research questions and tools	1	2	1	1	2	2
			CO2 - Experience in scientific writings	3	1	1	0	2	1
			CO3 - Practice in various aspects of scientific publications	3	1	1	0	2	1
			CO4 - Inculcation of research ethics	3	1	1	1	2	1
	19217BRC27	Participation in Bounded Research	CO1 - Hands on exposure to problem solving tools in contemporary research	3	0	0	2	1	2
			CO2 - Evolution of research intuitiveness and orientation	3	1	0	3	1	1
			CO3 - Familiarity with cutting edge research trends	2	1	0	3	1	1

III	19217AEC31	Genomics	CO1 - Acquire the aspects of Gene Contig and Shotgun method.	2	2	0	3	2	1
			CO2 - Know the features of the Genome Mapping databases.	1	1	0	1	1	1
	19217AEC32	Proteomics	CO1 - Gain knowledge on phylogenetic profiles	1	1	1	1	1	1
			CO2 - Describe the features of Yeast two-hybrid system.	2	1	1	1	1	1
	19217SEC33L	Genomics & Proteomics - Lab	CO1 - This paper will help students interested in careers as laboratory, research or animal care technicians in the fields of veterinary and human health or biotechnology.	3	0	2	2	2	1
	19217DSC34A	Discipline specific elective III Nanobiotechnology	CO1 - This course will act as a bridge between students from non-biology course at all levels	2	1	1	1	2	2
	19217DSC34B	Discipline specific elective III Environmental biotechnology	CO1 - This course is important in the era of industrialization leading to environmental hazards and hence will help students to take up a career in tackling industrial pollution and also who is willing to take up the research in areas like development of biological systems for remediation of contaminated environments (land, air, water), and for environment- friendly processes such as green manufacturing technologies and sustainable development	2	1	2	1	1	2
IV	19217AEC41	Food Technology	CO1 - To understand the basic food safety issues in the food market	2	2	2	1	1	2
			CO2 - To develop and evaluate quality of new food products using objective and subjective methodologies.	2	0	0	1	1	2

		CO3 - To understand the basic concepts in food chemistry and food analysis	2	0	0	1	1	2
19217AEC42	Bio instrumentation	CO1 - Check for analytical functions and find the analytical function and study	2	1	1	1	1	2
		CO2 - Learn the measurement systems, errors of measurement	3	0	1	1	1	2
		CO3 - Demonstrate basic knowledge of Biotechniques	2	1	1	1	1	1
19217SEC43L	Food technology and Bio instrumentation lab	CO1 - Ability to apply principles of food engineering in industry.	3	0	1	0	2	1
		CO2 - Understand, identify and analyze a problem related to food industry and ability to find an appropriate solution for the same.	2	1	1	0	1	1
19217DSC44A	Gene therapy utilization pharmacology	CO1 - Understand some of the types of disease that might be treatable by gene therapy	3	1	2	0	2	1
		CO2 - Understand the basic principles of genetic manipulation	2	1	0	1	2	1
		CO3 - Understand how genetics may be used in the design of drugs	2	0	0	1	2	2
19217DSC44B	Plant conservation & disaster management	CO1 - To make sustainable utilization of species and ecosystems	1		0	1	2	2
		CO2 - Familiarity with disaster management theory (cycle, phases)Knowledge about existing global frameworks and existing agreements (e.g. Sendai)	1	1	1	1	1	2
		CO3 - Regulatory practices, biosensors and applications in Pharmaceuticals	1		0	1	1	2
		CO4 - Quality Assurance and Validation	3	1	0	1	2	2

19217PRW45	Project work	CO1 - Experience from a master's project and international literature.	2	0	0	1	2	2
		CO2 - Develop ability to independently carry out a complete scientific process.	3	0	0	3	2	2
		CO3 - Learn about how to write dissertations and proposals for the scientific community.	2	2	1	0	1	2

1- Low, 2-Medium, 3- Higher, 0 No correlation

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMILNADU

School of Arts and Science
Department of Biotechnology
19MPBTGE
2019 Regulation
Program Outcomes and Course outcomes of
M. Phil., Mapping of COs and POs

Semester	Course Code	Title of the Course	COs	POS					
				PO1	PO2	PO3	PO4	PO5	PO6
I	193BTC12	Advanced Biotechnology	CO1 - Understanding research questions and tools	*		*		*	*
			CO2 - Experience in scientific writings	*	*	*		*	*
			CO3 - Practice in various aspects of scientific publications	*	*	*		*	*
			CO4 - Inculcation of research ethics	*	*		*	*	*
	193BTE13	Environmental Biotechnology	CO1 - Develop and demonstrate the advanced genetic engineering and cloning techniques	*			*	*	*
			CO2 - Explain the elaborate details of plant biotechnology like vector for gene transfer, Binary vector	*	*		*	*	*
			CO3 - Demonstrate the advanced fermentation techniques and conventional fermentation versus biotransformation.	*	*	*		*	*

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMIL NADU

School of Arts and Science
Department of Biotechnology
19PGMBGEC
2019 Regulation
Program Outcomes and Course outcomes of
M. Phil., Mapping of COs and POs

Semester	Course Code	Title of the Course	COs	POS					
				PO1	PO2	PO3	PO4	PO5	PO6
I	193BTC12	Advanced Biotechnology	CO1 - Understanding research questions and tools	3	0	1	0	2	1
			CO2 - Experience in scientific writings	2	1	1	0	1	1
			CO3 - Practice in various aspects of scientific publications	3	1	2	0	2	1
			CO4 - Inculcation of research ethics	2	1	0	1	2	1
	193BTE13	Environmental Biotechnology	CO1 - Develop and demonstrate the advanced genetic engineering and cloning techniques	2	0	0	1	2	2
			CO2 - Explain the elaborate details of plant biotechnology like vector for gene transfer, Binary vector	1	3	0	1	2	2
			CO3 - Demonstrate the advanced fermentation techniques and conventional fermentation versus biotransformation.	1	1	1	1	1	2

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMILNADU

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.Sc. BIOTECHNOLOGY CURRICULUM

REGULATION 2020

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.sc., CURRICULUM - REGULATION-2020

B.sc., Graduate Attributes

- **Research, inquiry and analytical thinking abilities.**
- **Capability and motivation for intellectual development.**
- **Ethical, social and professional understanding.**
- **Communication in** intra and inter disciplinary
- **Teamwork, collaborative and management skills in scientific research**
- **Information literacy in respective discipline**

B.sc., Program Educational Objectives PEO

- **PEO 1** : To obtain detailed information about the fundamentals of Biotechnology, allied subjects and life skills.
- **PEO 2** : To provide information about the molecular methods which involved in cellular processes of living systems such as microbes to higher order organisms for applied aspects. To address the emerging need for skilled scientific manpower with research ethics involving organisms.
- **PEO 3** : To impart the basics and current molecular tools in the areas of Molecular Diagnostics, Fermentation Technology, Plant, Animal & Environmental Biotechnology are included to train the students for man power development and also sensitize them to scope for research. The practical subjects will provide information about the careers in the industry and applied research where biological system is employed.
- **PEO 4** : To make the graduates of Biotechnology to learn and to adopt in a competitive world of technology update and contribute to all forms of life
- **PEO5-** To enable them to excute a research objective through experimentation

B.Sc., Programme Specific Outcome (PSO)

- **PSO1**- Graduates will exhibit contemporary knowledge in Biotechnology and students will be eligible for doing jobs in pharmaceutical and biotechnological Industry.
- **PSO2**-An expert in biotechnology and allied fields (medical, microbial, agricultural, environmental, plant and animal) for utilizing the practical skill to address biotechnological challenges.

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

- **PSO3-** Graduates will be able to work individually as well as in team to survive in multidisciplinary environment.
- **PSO4-** If students will engage themselves in the process of effective learning, it will give opportunities to utilize acquired knowledge for the catering the needs of science and technology as well as for the betterment of human mankind.
- **PSO5-**Graduates will be able to understand the potentials, and impact of biotechnological innovations on environment and their implementation for finding sustainable solution to issues pertaining to environment, health sector, agriculture, etc.

B.sc., Program Outcome PO

- **PO1-**Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life
- **PO2-**Understanding and better knowledge of the causes, types and control methods for environmental pollution by the students.
- **PO3-**The student will be able to discuss the mechanisms associated with gene expression system in prokaryotes and eukaryotes.
- **PO4-**Developed various communication skills such as reading, listening, speaking etc.,
- **PO5-**Acquired the skills in handling scientific instruments, planning and performing in laboratory experiments
- **PO6-**Ethics: Convey and practice social, environmental and biological ethics.
- **PO7-**To get knowledge about research tools and learn to do review literature. Ability to carry out independent literature survey corresponding to the specific publications type and asses basic research tool

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613403 - TAMILNADU

School of Arts and Science
Department of Biotechnology
20UGBTGEC
2020 Regulation
Program Outcomes and Course outcomes of
B.Sc., Mapping of COs and Pos

Semester	Course Code	Title of the Course	COs	POS						
				PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	20110AEC11	Language-I (Tamil-I)	CO1 - Learn the changes that have occurred in literature since the classical period.	*		*	*	*		*
			CO2 - Make use of vocabulary systematically.	*	*	*		*	*	*
			CO3 - Understand how to lead one's life realizing the modernity and its environment/atmosphere.	*	*	*		*	*	*
I	20111AEC11	Advanced English-I	CO1 - Develop vocabulary	*	*	*		*	*	*
			CO2 - Learn to edit and do proof reading	*	*		*	*		*
			CO3 - Read and comprehend literature	*	*	*		*	*	*
I	20111AEC12	English-I	CO1 - Read and comprehend literature	*	*	*	*		*	*
			CO2 - Appreciate poetry and prose	*		*	*	*	*	*
			CO3 - Familiarize students with fiction.		*	*	*	*		*

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMILNADU

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.Sc. BIOTECHNOLOGY CURRICULUM

REGULATION 2020

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.sc., CURRICULUM - REGULATION-2020

B.sc., Graduate Attributes

- **Research, inquiry and analytical thinking abilities.**
- **Capability and motivation for intellectual development.**
- **Ethical, social and professional understanding.**
- **Communication in** intra and inter disciplinary
- **Teamwork, collaborative and management skills in scientific research**
- **Information literacy in respective discipline**

B.sc., Program Educational Objectives PEO

- **PEO 1** : To obtain detailed information about the fundamentals of Biotechnology, allied subjects and life skills.
- **PEO 2** : To provide information about the molecular methods which involved in cellular processes of living systems such as microbes to higher order organisms for applied aspects. To address the emerging need for skilled scientific manpower with research ethics involving organisms.
- **PEO 3** : To impart the basics and current molecular tools in the areas of Molecular Diagnostics, Fermentation Technology, Plant, Animal & Environmental Biotechnology are included to train the students for man power development and also sensitize them to scope for research. The practical subjects will provide information about the careers in the industry and applied research where biological system is employed.
- **PEO 4** : To make the graduates of Biotechnology to learn and to adopt in a competitive world of technology update and contribute to all forms of life
- **PEO5-** To enable them to excute a research objective through experimentation

B.Sc., Programme Specific Outcome (PSO)

- **PSO1**- Graduates will exhibit contemporary knowledge in Biotechnology and students will be eligible for doing jobs in pharmaceutical and biotechnological Industry.
- **PSO2**-An expert in biotechnology and allied fields (medical, microbial, agricultural, environmental, plant and animal) for utilizing the practical skill to address biotechnological challenges.

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

- **PSO3-** Graduates will be able to work individually as well as in team to survive in multidisciplinary environment.
- **PSO4-** If students will engage themselves in the process of effective learning, it will give opportunities to utilize acquired knowledge for the catering the needs of science and technology as well as for the betterment of human mankind.
- **PSO5-**Graduates will be able to understand the potentials, and impact of biotechnological innovations on environment and their implementation for finding sustainable solution to issues pertaining to environment, health sector, agriculture, etc.

B.sc., Program Outcome PO

- **PO1-**Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life
- **PO2-**Understanding and better knowledge of the causes, types and control methods for environmental pollution by the students.
- **PO3-**The student will be able to discuss the mechanisms associated with gene expression system in prokaryotes and eukaryotes.
- **PO4-**Developed various communication skills such as reading, listening, speaking etc.,
- **PO5-**Acquired the skills in handling scientific instruments, planning and performing in laboratory experiments
- **PO6-**Ethics: Convey and practice social, environmental and biological ethics.
- **PO7-**To get knowledge about research tools and learn to do review literature. Ability to carry out independent literature survey corresponding to the specific publications type and asses basic research tool

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613403 - TAMILNADU

School of Arts and Science
Department of Biotechnology
20UGBTGEC
2020 Regulation
Program Outcomes and Course outcomes of
B.Sc., Mapping of COs and Pos

Semester	Course Code	Title of the Course	COs	POS						
				PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	20110AEC11	Language-I (Tamil-I)	CO1 - Learn the changes that have occurred in literature since the classical period.	*		*	*	*		*
			CO2 - Make use of vocabulary systematically.	*	*	*		*	*	*
			CO3 - Understand how to lead one's life realizing the modernity and its environment/atmosphere.	*	*	*		*	*	*
I	20111AEC11	Advanced English-I	CO1 - Develop vocabulary	*	*	*		*	*	*
			CO2 - Learn to edit and do proof reading	*	*		*	*		*
			CO3 - Read and comprehend literature	*	*	*		*	*	*
I	20111AEC12	English-I	CO1 - Read and comprehend literature	*	*	*	*		*	*
			CO2 - Appreciate poetry and prose	*		*	*	*	*	*
			CO3 - Familiarize students with fiction.		*	*	*	*		*

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613 403 - TAMIL NADU

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.Sc. BIOTECHNOLOGY CURRICULUM

REGULATION 2022

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF BIOTECHNOLOGY

B.sc., CURRICULUM - REGULATION-2022

B.sc., Graduate Attributes

- **Research, inquiry and analytical thinking abilities.**
- **Capability and motivation for intellectual development.**
- **Ethical, social and professional understanding.**
- **Communication in** intra and inter disciplinary
- **Teamwork, collaborative and management skills in scientific research**
- **Information literacy in respective discipline**

B.sc., Program Educational Objectives PEO

- **PEO 1** : To obtain detailed information about the fundamentals of Biotechnology, allied subjects and life skills.
- **PEO 2** : To provide information about the molecular methods which involved in cellular processes of living systems such as microbes to higher order organisms for applied aspects. To address the emerging need for skilled scientific manpower with research ethics involving organisms.
- **PEO 3** : To impart the basics and current molecular tools in the areas of Molecular Diagnostics, Fermentation Technology, Plant, Animal & Environmental Biotechnology are included to train the students for man power development and also sensitize them to scope for research. The practical subjects will provide information about the careers in the industry and applied research where biological system is employed.
- **PEO 4** : To make the graduates of Biotechnology to learn and to adopt in a competitive world of technology update and contribute to all forms of life
- **PEO5-** To enable them to excute a research objective through experimentation

B.Sc., Programme Specific Outcome (PSO)

- **PSO1-** Graduates will exhibit contemporary knowledge in Biotechnology and students will be eligible for doing jobs in pharmaceutical and biotechnological Industry.
- **PSO2-** An expert in biotechnology and allied fields (medical, microbial, agricultural, environmental, plant and animal) for utilizing the practical skill to address biotechnological challenges.
- **PSO3-** Graduates will be able to work individually as well as in team to survive in multidisciplinary environment.
- **PSO4-** If students will engage themselves in the process of effective learning, it will give

Head of the Dep
Department of Biotec
School of Arts & Scie
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

opportunities to utilize acquired knowledge for the catering the needs of science and technology as well as for the betterment of human mankind.

- **PSO5** Graduates will be able to understand the potentials, and impact of biotechnological innovations on environment and their implementation for finding sustainable solution to issues pertaining to environment, health sector, agriculture, etc.

B.sc., Program Outcome PO

· **PO1**-Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life · **PO2**-Understanding and better knowledge of the causes, types and control methods for environmental pollution by the students.

· **PO3**-The student will be able to discuss the mechanisms associated with gene expression system in prokaryotes and eukaryotes.

· **PO4**-Developed various communication skills such as reading, listening, speaking etc.,

· **PO5**-Acquired the skills in handling scientific instruments, planning and performing in laboratory experiments

· **PO6**-Ethics: Convey and practice social, environmental and biological ethics. ·

PO7-To get knowledge about research tools and learn to do review literature. Ability to carryout independent literature survey corresponding to the specific publications type and asses basic research tool

Head of the Department
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.

PRIST
DEEMED TO BE
UNIVERSITY
NAAC ACCREDITED
THANJAVUR – 613403 - TAMILNADU

School of Arts and Science
Department of Biotechnology
22UGBTGEC
2022 Regulation
Program Outcomes and Course outcomes of
B.Sc., Mapping of COs and Pos

Semester	Course Code	Title of the Course	COs	POS						
				PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	22110AEC11	Language-I (Tamil-I)	CO1 - Learn the changes that have occurred in literature since the classical period.	*		*	*	*		*
			CO2 - Make use of vocabulary systematically.	*	*	*		*	*	*
			CO3 - Understand how to lead one's life realizing the modernity and its environment/atmosphere.	*	*	*		*	*	*
I	22111AEC11	Advanced English-I	CO1 - Develop vocabulary	*	*	*		*	*	*
			CO2 - Learn to edit and do proof reading	*	*		*	*		*
			CO3 - Read and comprehend literature	*	*	*		*	*	*
I	22111AEC12	English-I	CO1 - Read and comprehend literature	*	*	*	*		*	*
			CO2 - Appreciate poetry and prose	*		*	*	*	*	*
			CO3 - Familiarize students with fiction.		*	*	*	*		*

Head of the Dept.
Department of Biotechnology
School of Arts & Science
Prist Deemed to be University, Thanjavur.

Dean of Arts & Science
PRIST Deemed to be University
Thanjavur - 613 403, Tamilnadu.