Course outcomes and Programme specific outcomes of Biotechnology

Programme outcomes

1. The students of Biotechnology will demonstrate knowledge and comprehension of core concepts, which includes but is not limited to knowledge of cellular biology, biochemistry, genetics, molecular biology, and microbiology, Immunology, Statistics and Environmental Biotechnology.
2. Biotechnology students will demonstrate knowledge of ethical principles regarding the use of Genetic Engineering
3. The students will demonstrate the ability to understand, analyze and evaluate original research literature and to communicate this understanding using appropriate technology.
4. The Students have the knowledge about current scientific literature, computer programs and web information.
5. The students of Biotechnology have the ability to think and solve problems in the field of biotechnology.
6. The students will effectively communicate with biotech and other interdisciplinary professionals.
7. The graduates will be able to design a process, a product or a system within constraints of cost, social relevance, safety, economics, ethics, environment and sustainability.
8. The graduates will be effective in multidisciplinary teams in bio system design and development, drug discovery, and process optimization
9. The graduates will be able to participate and contribute to biotechnological problems at the frontier
10. The graduates will display professional and ethical behavior
11. The graduates will be able to communicate professionally
12. The graduates will display skills required for continuous learning and professional up gradation.
13. The graduates will be able to plan, formulate, execute and manage projects in the domain of life sciences, bioprocess and bioinformatics
14. The students will explore the opportunities in different areas of life sciences and can relate the wide scope of Biotechnology as a multidisciplinary subject.

Programme specific outcomes

PSO1: Understanding the concepts of Cell biology and Genetics

PSO2: To get insights about the discovery of nucleic acids

PSO3: Learning about basic concepts of Bioinformatics

PSO4: Understand the classification, importance & functions of various biomolecules in the living systems

PSO5: Analyze the Energy produced in different bio energetic cycles.

Understand the principles of Bio analytical techniques

PSO6: understand the concepts and applications of Biostatistics

PSO7: Understand the classification of microorganisms and discovery of microscopes & its Importance.

PSO8: Analyze the composition of different media and understand the importance of Sterilization.

PSO9: Understand the process of Immunity development

PSO10: Understand the mechanism of Immunity development & also Auto Immune disorders.

PSO11: Analyze the Complexity and composition of genome of various species

PSO12: Importance of extra chromosomal DNA and its organization can be studied. Importance of essential genes and non-essential genes can be understood.

PSO13: Central dogma of life and gene regulation mechanisms is elaborated.

PSO14: Perform the procedure for extraction of DNA from different sources.

PSO 15: Getting in depth knowledge about rDNA technology and its applications

PSO16: Understating the importance of Industrial Biotechnology and Environmental Biotechnology

Course outcomes of Biotechnology

CO1: To know about ultrastructure of cells

CO2: To understand about cell cycle

CO3: To know about Principles and mechanism of inheritance

CO4: To know about nucleic acids

CO5: To understand about Bioinformatics tools and their applications.

CO6: To know about Reassociation kinetics of DNA.

CO7: To understand about Kinetic classes of DNA

CO8: To understand about globin gene family

CO10: To know about mitochondrial genome organization

CO11: To know about Chloroplast genome organization

CO12: To know about process of transcription in Prokaryotes.

CO13: To understand process of translation in prokaryotes

CO14: To understand about the Lac operon in prokaryotes.

CO15: To understand about the different breeding methods in animals.

CO16: To understand about Molecular markers and their use in biology.

CO17: To understand about invitro fertilization and embryo transfer methods.

CO18: To know about exvivo invivo gene therapy – Discuss.

CO19: To know about methods of gene transfer.

CO20: To know about recombinant DNA technology in agriculture and pharmacy

CO21: To know about Role of Micro nutrients and hormones in morphogenesis.

CO22 To know about classification of carbohydrates

CO23 To know about nomenclature and classification of Enzymes.

CO24 To know about structural organization of Proteins

CO25 To know about on Michaelis Menton Equation.

CO26 To know about Enzyme inhibition.

CO27 To know about Gluconeogenesis in detail.

CO28 To know about TCA cycle.

CO29 To know about Chromatography

CO30 To know about electron transport chain.

CO31 To know about on sampling methods.

CO32 To know about Chi square test

CO33: To know about classification of microorganisms

CO34: To know about disease causing pathogens & their symptoms.

CO35: To know about Bacterial Growth curve & factors affecting Bacterial growth curve.

CO36: To know about Haptens & its adjuvants

CO37: To know about types of Immunity.

CO38: To know about production of Monoclonal antibodies.

CO39: To know about types of Hypersensitivity.

CO40: To know about Applications of rDNA technology