

## **PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

1. Prepare graduates to excel as Biotechnologists, adept at addressing real-world challenges in academia and industry.
2. Cultivate graduates into Biotechnology professionals, innovators, or entrepreneurs involved in the development, deployment, and implementation of cutting-edge technologies.
3. Enable graduates to collaborate effectively with professionals from other disciplines, contributing to the economic growth and sustainable development of the country.
4. Equip graduates with the skills and knowledge to pursue advanced studies in the biotechnology field, enabling lifelong learning and continuous professional development.
5. Empower graduates to pursue fulfilling career paths in teaching, research, and other scholarly pursuits, thereby advancing the frontiers of scientific knowledge.

## **PROGRAM OUTCOMES (POs)**

PO1	<b>Engineering knowledge:</b> Apply an in-depth understanding of the fundamental principles of biological science, mathematics, chemistry, physics, and technological expertise to effectively address complex technological challenges in the field of biotechnology.
PO2	<b>Problem Analysis:</b> Identify biotechnology problems, engage with and review research literature, formulate hypotheses, and analyze complex problems in biotechnology using mathematical, scientific, and engineering principles to derive well-substantiated conclusions.
PO3	<b>Design and Development of Solutions:</b> Design solutions for complex engineering and technological problems in biological science. Design comprehensive systems, components, device, kit, methodologies or processes that meet specific requirements, with due consideration for healthcare, agriculture, public welfare, safety, and the environment. Design and demonstrate prototype within real world settings with feasible operational context.
PO4	<b>Investigation:</b> Conduct investigations of complex technological problems in biotechnology, including designing experiments, testing, analyzing and

	interpreting data, and skilfully synthesizing the information to provide substantiated conclusions.
PO5	<b>Modern Tool Usage:</b> Effectively select, apply, and create suitable techniques, resources, and cutting-edge technologies, including experimental methods, instrumentation, downstream, predictive modelling, data retrieval, analysis and development to address complex engineering and technological problems in biotechnology with deep understanding on scope and limitations of these methodologies.
PO6	<b>The Engineer and Society:</b> Enhance societal well-being through a comprehensive understanding of biotechnology and its global implications. Address dimensions of health, safety, legality, and culture, and wholeheartedly embrace the responsibilities associated with global biotechnological endeavours.
PO7	<b>Environment and Sustainability:</b> Understand the broader societal context of biotechnology solutions and the vital demand of sustainable development. Recognize the environmental and social impacts of technological solutions.
PO8	<b>Ethics:</b> Internalize and uphold the professional ethics, norms, and responsibilities inherent in research and engineering practice. Demonstrate an unwavering commitment to ethical conduct within the profession.
PO9	<b>Individual and Team work:</b> Operate effectively as an autonomous contributor, leader, or member within diverse teams operating in a multidisciplinary and collaborative settings.
PO10	<b>Communication:</b> Communicate complex engineering concepts clearly and concisely to peers, the general public, and other stakeholders. Generate coherent reports, comprehensive design documentation, persuasive presentations, and precise instructions.
PO11	<b>Project Management and Finance:</b> Acquire a comprehensive understanding of management and financial practices in the context of biotechnology, including their limitations. Apply this knowledge skilfully to effectively manage projects and navigate complex inter and multidisciplinary environments.
PO12	<b>Lifelong Learning Orientation:</b> Recognize the need for continuous learning in the face of evolving technologies. Be willing and able to engage

	in lifelong learning independently to stay up-to-date with technological advancements.
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### **PROGRAM SPECIFIC OUTCOMES (PSOs)**

#### **PSO1: Academic and Communication Excellence**

Graduates will be experts of biotechnological principles in theory as well as practical courses with the ability to understand and communicate complex scientific concepts and findings utilizing oral, written, and visual communication mediums effectively.

#### **PSO2: Professional Excellence**

Graduates will be updated with the rapid advancements in biotechnological tools, techniques, and methodologies, allowing them to adapt to evolving trends and incorporate emerging technologies.

#### **PSO3: Research Excellence**

Students will be equipped with critical thinking and problem-solving abilities to identify, analyze, and propose solutions to challenges existing in society through various biotechnological applications, fostering research and innovation.