MANIPAL UNIVERSITY JAIPUR

SCHOOL OF CIVIL, BIOTECHNOLOGY & CHEMICAL ENGINEERING

DEPARTMENT OF BIOTECHNOLOGY AND CHEMICAL ENGINEERING

PROGRAM OUTCOMES

[PO.1]. Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

[PO.2]. Problem Analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

[PO.3]. Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

[PO.6]. The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

[PO.7]. Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practices.

[PO.9]. Individual and Team Work: Function effectively as an individual, and as a member or

leader in diverse teams, and in multidisciplinary settings.

[PO.10]. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. Life-long Learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

B.Tech. (Computer Science and Biosciences) Program Educational Objectives

PEO 1. **Graduates will nurture lifelong self-learning and perpetual curiosity to keep pace with advancements in science and technology.**

PEO 2. **Graduates will design and implement efficient computer-based solutions particularly for biological applications.**

PEO 3. **Graduates will impart analytical and research skills for nurturing entrepreneurial skills.**

B.Tech. (Computer Science and Biosciences) Program Specific Outcomes

PSO 1. **Graduates will possess the interdisciplinary skills to solve intricate challenges at the intersection of computer science and biosciences, spanning fields like bioinformatics, computational biology and artificial intelligence.**

PSO 2. **Graduates will be proficient in diverse career paths, including industry, research and academia; empowering them to leverage their expertise in computer science and biosciences to confront issues in healthcare and biotechnology.**

PSO 3. **Graduates will instill a dedication to continuous learning, professional growth, and ethical conduct, empowering them to embrace evolving technologies and make meaningful contributions for the societal development.**