Mahatma Phule Shikshan Sanstha's

# Karmaveer Bhaurao Patil College, Urun- Islampur

# Department of Biotechnology (Entire)

## Program Outcomes (POs)

1. **Domain Specific knowledge:** Apply the knowledge of Chemistry, Biochemistry, Microbiology, Plant science, Animal science, Cell biology, Genetics, Immunology, Molecular biology, Metabolic pathways, Enzymology, Plant and Animal Biotechnology, Ecology, Environmental Biotechnology, rDNA Technology, Industrial biotechnology, Medical Biotechnology, Bioinformatics, Nanotechnology, Biostatistics and Computer science to provide the solution to the Scientific and Technological and Social problems as well.

2. **Problem analysis:** Identification and formulation of the problems. Data analysis and Interpretation of the results with basic principles.

3. **Design/Development of solutions:** Design solutions for Scientific and Technological and Social problems of various disciplines that significantly realize domestic, agricultural, medical, pharmaceutical, industrial, societal, environmental considerations.

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.

5. **Modern Tool Usage:** Making use of sophisticated tools, Sophisticated Instruments, Modern methodology, Microscopy, Chromatography, Spectroscopy, Electrophoresis, Thermal Cycler, Gel documentation, DNA Sequencer, Nanotechnology.

6. **The Science and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, industrial, agricultural issues.

7. **Environment and sustainability:** Application of the knowledge to ensure environmental sustainability

8. **Ethics:** Apply ethical principles in scientific Practices

9. **Individual and team work:** Function effectively as an Individual and as a Member or Leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on Scientific and Technological and problems with society at large. This includes ability to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions to realize outreach to the society.

11. **Life-long learning:** Recognize the need of study and ability to engage in independent and life-long learning in the broadest context of scientific change.

12. **Project management and finance:** Demonstrate knowledge and understanding of the Scientific, Technological and management principles and apply these to the project work, as a member or leader in a team.

## Program Specific Outcomes (PSOs)

**Professional Skills:** An ability to understand the basic concepts of various branches of Biotechnology like Agricultural Biotechnology, Food Biotechnology, Industrial Biotechnology, Medical Biotechnology, Pharmaceutical Biotechnology, Environmental Biotechnology, Microbial Biotechnology, Fermentation Biotechnology, Genetic Engineering, Bioinformatics, Nanotechnology, Plant- Animal Tissue culture, Immunology and to develop skills of respective disciplines.

**Problem-Solving Skills:** An ability to solve Scientific and Technological and Social problems using latest technology and to arrive at cost effective and appropriate solutions.

**Successful Career and Entrepreneurship:** An understanding of social awareness along with ethical responsibility to have a successful career and to sustain zeal for real-world applications using optimal resources as an Entrepreneur.