

## M.Sc. BIOTECHNOLOGY

| <b>PROGRAMME EDUCATIONAL OBJECTIVES (PEO)</b> |                                                                                                                                                 |
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| PEO1:                                         | Think critically and creatively about the use of biotechnology to address local and global problems.                                            |
| PEO2:                                         | Implement the scientific skills for development of industrial applications and entrepreneurship.                                                |
| PEO3:                                         | Function on interdisciplinary framework of biotechnology and related fields.                                                                    |
| PEO4:                                         | Adopt ethical attitude and exhibit effective skills in teamwork and leadership qualities                                                        |
| PEO5:                                         | Apply research strategies to solve biotechnology problems.                                                                                      |
| PEO6:                                         | Discover in depth knowledge of microbial, animal and plant biotechnology, and also broad area of biochemistry, Immunology and molecular biology |

| <b>PROGRAMME OUTCOME (PO)</b> |                                                                                                                                                                                                                                                                                                 |
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| PO1:                          | Scientific Knowledge living organisms both prokaryotic and eukaryotic cells, morphology, cellular, molecular and its functions.                                                                                                                                                                 |
| PO2:                          | Problem Solving skill research-based knowledge and research methods including design of experiments, analysis and interpretation of biological data and thereby solve the biotechnological problems                                                                                             |
| PO3:                          | Ability to design and development of Solution for any specific needs from societal and environmental aspects.                                                                                                                                                                                   |
| PO4:                          | Knowledge to conduct investigations of complex problems by recognizing the need for prepare and creating, selecting, learning and applying appropriate techniques, resources, and modern instrumentation to solve complex biotechnological activities with an understanding of the limitations. |
| PO5:                          | Skill to use tools in Biotechnology & Bioinformatics for Gene Mapping DNA analysis and offer new vistas for Drug design and discovery.                                                                                                                                                          |

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| PO6: | Advanced skills to apply their knowledge in other advanced subject area like Nano biotechnology, immunotechnology and animal and Plant Biotechnology for the betterment and advancement of their professional career. |
| PO7: | Develop individual and team work with sound knowledge on Ethics, Leadership and consensus building skills relevant to Biotechnology aspects of business enterprise.                                                   |
| PO8: | Ability to link with society & Ethics by applying background knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional.                |

| <b>PROGRAMME SPECIFIC OUTCOME (PSO)</b> |                                                                                                                                                                                                                                                                                                                                  |
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| PSO1:                                   | Students will acquire knowledge about cell structure and functions, major bio-molecules, and their metabolic pathways.                                                                                                                                                                                                           |
| PSO2:                                   | Students will understand the importance of microbes in environmental aspects, medical, industrial, agricultural, microbe interaction with plant and animal, food aspects which is an integrated part of Biotechnology. They will become familiar with the tools and techniques of genetic engineering.                           |
| PSO3:                                   | Student will know molecular aspects of cellular function of eukaryotic cell, immune cells, human pathogens, current therapy and environmental issues, developmental biology along with physiology will give an understanding of the causes, diagnosis and treatment of disease, and how they affect different parts of the body. |
| PSO4:                                   | Students will imbibe the importance of Plant and Animal biotechnology as in vitro culture, maintenance and preservation of plant & animal cells, tissues and organs, large scale production of bioproducts, types of pollution, waste water management, solid waste management, biopesticides, biofertilizer and composting.     |
| PSO5:                                   | Students will apply the knowledge of basic sciences and technology as well as nanotechnology in cancer biology and its applications to demonstrate research skills and develop technology for commercialization and employability skill to become entrepreneur with proper knowledge on Ethical issues, Biosafety, IPR.          |