

## **M.Sc. Biochemistry and M.Sc. Biotechnology Programmes**

### **Programme Outcomes**

PO1: Domain knowledge: Demonstrate knowledge of basic concepts, principles and applications of the specific science discipline.

PO2: Resource Utilisation: Cultivate the skills to acquire and use appropriate learning resources including library, e-learning resources, ICT tools to enhance knowledge base and stay abreast of recent developments.

PO3: Analytical and Technical Skills: Ability to handle/use appropriate tools/techniques/equipment with an understanding of the standard operating procedures, safety aspects/limitations.

PO4: Critical thinking and Problem solving: Identify and critically analyse pertinent problems in the relevant discipline using appropriate tools and techniques as well as approaches to arrive at viable conclusions/solutions.

PO5: Project Management: Demonstrate knowledge and scientific understanding to identify research problems, design experiments, use appropriate methodologies, analyse and interpret data and provide solutions. Exhibit organizational skills and the ability to manage time and resources.

PO6: Individual and team work: Exhibit the potential to effectively accomplish tasks independently and as a member or leader in diverse teams, and in multidisciplinary settings.

PO7: Effective Communication: Communicate effectively in spoken and written form as well as through electronic media with the scientific community as well as with society at large. Demonstrate the ability to write dissertations, reports, make effective presentations and documentation.

PO8: Environment and Society: Analyse the impact of scientific and technological advances on the environment and society and the need for sustainable development.

PO9: Ethics: Commitment to professional ethics and responsibilities.

PO10 Life-long learning: Ability to engage in life-long learning in the context of the rapid developments in the discipline.

### **M.Sc. Biochemistry (Two-Year)**

#### **Programme Specific Outcome**

At the end of the programme, the student will be able to

PSO1: Understand the functions of biomolecules in relation to their molecular structure.

PSO2: Acquire deep scientific knowledge in subjects like cell biology, enzymology, biotechnology, Metabolism, endocrinology, immunology, genetics, genetic engineering and clinical biochemistry.

PSO3: Describe the biochemical basis of diseases, regulation of metabolic pathways and gene expression regulation.

PSO4: Undertake biochemical experiments using classical and modern instruments of biochemistry & molecular biology, record and interpret the results, draw conclusions.

PSO5: Work collaboratively as a team in classroom and laboratory.

PSO6 Communicate biochemical concepts through effective written and oral presentation.

## **M.Sc. Biotechnology (Five-Year) Programme**

### **Programme Specific Outcomes**

At the end of the programme, the student will be able to

PSO1: Understand and apply basic science to biotechnological problems.

PSO2: Characterize biological samples using experimental techniques.

PSO3: Appreciate the pharmacokinetics of drugs and principles involved in drug manufacture and drug approval and biopharmaceuticals in development

PSO4: Appreciate and apply the benefits of biotechnology interventions for mankind in relation to environment, industry, medicine and agriculture.

PSO5: Use modern software tools for sequence alignment and structure prediction, molecular modeling and data acquisition for genome and proteome analysis.

PSO6: To realize personal and social responsibilities related to modern biotechnological research, environmental safety, ethical issues and intellectual property and develop entrepreneurship skills.

## **M.Sc. Biotechnology (Two-Year) Programme**

### **Programme Specific Outcomes**

At the end of the programme, the student will be able to

PSO1: Demonstrate an understanding of biological principles and processes occurring in living systems.

PSO2: Apply the knowledge in biotechnology for industrial, pharmaceutical, medical and agricultural applications and find solutions for biotechnological problems.

PSO3: Use current biochemical and molecular techniques to undertake experiments, interpret results and draw conclusions.

PSO4: Use software tools for sequence alignment and structure prediction and data Acquisition for genome and proteome analysis.

PSO5: Understand personal and social responsibilities related to modern biotechnological research and be aware of the ethical issues in biotechnology and intellectual property rights and take up entrepreneurial ventures.