



# Jamal Mohamed College (Autonomous) Trichy

## Department of Biotechnology

### B.Sc. Biotechnology

#### Students will be able to

- ✚ Demonstrate a base of knowledge on the fundamentals of biotechnology and technical concepts in the field of biotechnology.
- ✚ Recognize the importance of bioethics, IPR, entrepreneurship, communication and managerial skills as instrumental to future biotechnologist.
- ✚ Discuss the domains of biotechnology and their applications in industrial research, scientifically and ethically.
- ✚ Employ basic laboratory skills for research in biotechnology and interdisciplinary aspects of biotechnology using scientific methods to explore natural phenomena.
- ✚ Combine the principles of biotechnology and its interdisciplinary concepts for finding solutions to contemporary biological questions.

### M.Sc. Biotechnology

#### Students will be able to

- ✚ Discuss the principles and the applications of molecular biology, methods with an emphasis on the application of recombinant DNA technology to animals, plants and microbes.
- ✚ Explain the concepts and applications of monoclonal antibody technology, use of mammalian cells for the production of pharmaceutical products.
- ✚ Relate the applications of biotechnology and advances in the different areas like medical, environmental, agricultural, veterinary and forensic sciences.
- ✚ Apply technical skills necessary to support biotechnology research study.
- ✚ Extrapolate the scope for career in biosciences by getting through competitive exams or through research undertakings.



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## M.Phil. Biotechnology

### Students will be able to

- ✚ Demonstrate critical understanding of advanced level of updated knowledge in the field of biotechnology.
- ✚ Apply the knowledge of teaching learning skills in personal and professional life.
- ✚ Integrate life-long learning skills and academic advancements.
- ✚ Appraise biotechnological research using theoretical knowledge and practical application of laboratory equipments critically and systematically.
- ✚ Prepare research project reports for publication in journals and present them orally and in written form.

## **Post Graduate Diploma in Fermentation Technology**

### Students will be able to

- ✚ Describe the basic concepts in biomolecules and microbial biochemistry.
- ✚ Explain the principles of fermentation technology, use of biocatalysts and biotransformation involved in the bioprocess.
- ✚ Illustrate the process of industrial fermentation, bio process of animal and plant cell and the role of enzymes in fermentation.
- ✚ Summarize the steps in downstream processing.
- ✚ Evaluate the cost effective fermentation process and bioprocess in compliance with market demand.



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## Post Graduate Diploma in Fermentation Technology

### Students will be able to

- ✚ Explain the fundamental principles of Bioinformatics and statistical applications in bioinformatics.
- ✚ Outline the process of generation, manipulation and representation of molecules for drug modeling.
- ✚ Describe the basic structure of biological molecules, process of acquiring the structures and the interaction between the molecules.
- ✚ Develop and apply basic computer programming to build biological algorithms and models to study their relationships.
- ✚ Deduce the interrelationship between genomics and Proteomics, techniques involved in analyzing proteomics and its applications.