



# **JAIN UNIVERSITY**

Declared as Deemed-to-be University u/s 3 of the UGC Act, 1956

## **Master of Science - Biotechnology Course Guide**

[www.jainuniversity.ac.in](http://www.jainuniversity.ac.in)

## Course Overview

The M.Sc. Biotechnology course is designed to equip the students with all the tools and techniques, in theory and practical's of modern biology for application in industry and agriculture. The highlight of the course is that, in addition to the formal class room teaching, well-planned lab sessions and interactive tutorials, exposure to all experimental tools used in modern biotechnology industry and research is provided through carefully designed research project.

### Programme Name

**Master of Science**

### Programme Code

**044**

### Course Code & Name

**4401 – M.Sc in Biotechnology**

### Degree Awarded

**Master of Science**

### Duration of the Programme

**2 years, 4 semesters**

### Total Credits

**128**

### Eligibility

**The minimum qualification required to apply is a bachelor's degree in biotechnology / microbiology / botany / biochemistry**

### Medium of Instruction / Examination

**English**

### Study Campus

**Center for Post Graduate Studies  
Jayanagar 3<sup>rd</sup> Block, Bangalore**

### Programme Timings

**8.30 am – 4.30 pm (Mon – Fri) & 8.30 am – 1.00 pm (Sat)**

### Course Advisor

**Dr. Sudha Deshmukh  
+91 99729 11288**

## Examinations & Assessments

1. Internal tests
2. Assignments
3. Seminar presentation
4. Preparatory theory and Practical examination
5. End term theory and Practical examination

## Course Curriculum

### Semester 1

- Basic Mathematics and Biostatistics
- Cell Biology and Molecular Genetics
- Molecular Biology
- General Microbiology

#### Learning Labs

- Cell Biology, Genetics and Molecular Biology
- General Microbiology

### Semester 2

- Molecular Biophysics
- Biological Chemistry
- Immunology and Immunotechnology
- Genetic Engineering

#### Learning Labs

- Biological Chemistry
- Immunology, Immunotechnology & Genetic Engineering

### Semester 3

- Plant Biotechnology
- Animal Biotechnology
- Computer Applications and Bioinformatics

#### Elective (any one)

- Environmental Biotechnology
- Enzyme Technology
- Elementary Methods in Computational Biology
- Phytochemistry and Pharmacognosy

#### Learning Labs

- Plant and Animal Biotechnology, Computer Applications and Bioinformatics

### Elective (any one)

- Environmental Biotechnology
- Enzyme Technology
- Elementary Methods In Computational Biology
- Phytochemistry and Pharmacognosy

### Semester 4

- Regulatory Requirements In Biotechnology (Bioethics, Biosafety and IPR)
- Research Methodology, Clinical Research and Database Management

### Elective (any one)

- Industrial Biotechnology
- Fermented Food Technology
- Genomics & Proteomics
- Medical Biotechnology

### Learning Labs - Elective (any one)

- Industrial Biotechnology
- Fermented Food Technology
- Genomics & Proteomics
- Medical Biotechnology
  
- Project
- Presentation & Defence
- Viva-Voce

### Career Opportunities

Medical laboratory scientists, scientific officers or research and development scientists in diverse fields including, biochemistry, microbiology, molecular biology, diagnostic services and pathology services, pharmaceutical industries, forensic science laboratories, veterinary science, racing industry, agribusinesses, wine industry and breweries, biotechnology businesses, food technologists, quality assurance officers, occupational health and safety officers, scientific sales representatives/ executives, staff with science publishers, newspaper writers in this field, also PhD students in any of the above fields.