



**MGMUNIVERSITY**  
AURANGABAD

## **INSTITUTE OF BIOSCIENCES & TECHNOLOGY**

### **PROFESSIONAL PG-DEGREE PROGRAM**

### **M.SC. (MICROBIOLOGY/VIROLOGY)**

<b>Professional Degree Awarded</b>	<b>M.Sc. Masters of Science</b>
<b>Duration of the Degree Program</b>	<b>Two Years</b>
<b>Semester</b>	<b>Four (4)</b>
<b>Intake</b>	<b>20</b>
<b>Tuition Fee</b>	<b>Rs. 1,00,000/-</b>

#### **PROGRAM OVERVIEW**

The program involves the study of medical and molecular aspects of bacteriology, virology, mycology, epidemiology and management of infectious diseases. It prepares the students for a career in biomedical/clinical sciences, academics and industrial research. In simple terms, it is study of small living things that cannot be seen without the use of a microscope, such as microorganisms or microbes.

The program aims to provide advance education and research in Microbiology/Virology that can offer sustainable solutions for agriculture, environment and energy sectors.

#### **PROGRAM DESCRIPTION**

- Molecular biology is the study of the basis of life, focuses on the structure and function of DNA, RNA and protein and their interactions with each other.
- This knowledge has led us to understand molecules within viral, microbial and eukaryotic organisms and has been at the forefront of scientific discovery since the identification of the structure of DNA by Watson and Crick in the 1950's. It is responsible for new and exciting techniques to detect and treat disease, produce drugs and vaccines, and uncover further the path of evolution.

- This Master's course responds to the demand for highly skilled scientists who can identify defects in cellular systems at the nucleic acid level and conduct genetic modification of organisms which allow a greater understanding of cellular function. Such insights and innovations are already responsible for the development of new diagnostic tests, novel products, therapeutic agents, detection of biomarkers, identification of faulty genes and subsequent correction of those defects.
- Our group enterprise projects, which involve close collaboration with entrepreneurs, provide a great opportunity for you to stand out from other graduates.

## SPECIAL FEATURES

- Industry-relevant teaching and resources ranging from modern library and computing facilities to dedicated career advice and impressive Students' Union activities.
- Designed to build a strong foundation with theoretical knowledge and specialized practical training
- Exposure to next-generation technologies.
- Basic and advanced academic, research, and industry-based curriculum consisting core, advanced, optional, and specific courses for the holistic development of students in Food science
- Preparing students for campus recruitment

## PROGRAM STRUCTURE

- Two-year program with 68 choice-based credits to equate the professional degree
- Specialized experimental training with special attention to each individual through the 'Exploration Workshop'
- Special Open Elective course for students per semester
- Specialized labs with highly automated instruments
- Interactive learning with e-classrooms
- A complete package with an idea about various fields associated with microbiology/virology and life sciences
- As a final year student, you will have an opportunity to undertake a project in the labs of our world-class bioscience researchers. To support our research, we have extensive research facilities equipped with high-quality technology.

## PROGRAM CONTENTS

- Microbiologists are in high demand in various fields like medical research, quality control and biotechnology industry. Many graduates secure high paying jobs as researchers working in universities, pharmaceutical and bioscience companies and institutes.
- The new course curriculum shall provide ample opportunities to the students to specialize in several different areas like Concepts & Principles of Genetics, Principles & Practice of Microbiology/Virology, Principles of Population Genetics, Biotechnology Approaches for Quality Traits, Introduction to Cytogenetics, Advances in Quantitative Genetics, Radiobiology & Mutation Breeding, molecular Genetics in last year Research program etc.
- Education is by theory, practical, tutorials, seminars and supervised research projects.
- In this program you'll be taught by our proficient academician, well known scientist and industrialists.
- The syllabus is based on bloom's taxonomy. Students will learn through practical oriented coursework.
- Well-equipped digital lecture hall Computer lab, Seminar hall, Workshop, problem-based learning etc.

## LEARNING FACILITIES

Our modern teaching labs are equipped for a range of Microbiology/Virology techniques. Below are a few of them:

- Polymerase chain reaction (PCR); DNA sequencing; gel electrophoresis; Spectro-photometry; dissection and histology; etc. Our computing facilities include access to over 200 PCs in dedicated clusters and e-learning tools including online lecture notes, discussion boards, lecture podcasts and quizzes.

## RESEARCH FACILITIES

- In this program, you will have an opportunity to conduct a research project in the field of bacteriology, medical and basic mycology, virology and parasitology. You gain a cross-disciplinary training from genetic engineering to drug development. Your research will contribute to a range of fields including Infectious diseases, Cellular architecture and dynamics and Industrial biotechnology.
- You are based in a research lab and undertake research on a project agreed with your Research Supervisor. As this is a research-focused master's course, you take an interactive approach to learning, rather than taking traditional lectures. Seminars, workshops and lab meetings enable you to gain an in-depth understanding of the field. A wide range of courses and workshops are available for your professional development as a research scientist.
- Our research is focussed on biological processes at the molecular and cellular level and spans the disciplines of biochemistry, genetics, biotechnology and biomedical research.
- In the Research Skills unit, you have the opportunity to carry out techniques that are widely used in current biological science research.
- Final year topics reflect the current hotspots of bioscience endeavour and the research interests of our staff, and are constantly being updated. You will undertake an independent in-depth research project that may involve supervised practical work in a laboratory, or you may choose to work on e-learning, educational, data analysis, enterprise topics.

## COURSEWORK AND ASSESSMENT

The relative weightage to the various examinations, course work, group project, lab report, oral examination, poster presentation, research project, case study, study tour, Unit test, Quiz, Home Assignment, Seminar and record maintained during a semester shall be considered for evaluation.

## DISABILITY SUPPORT

Practical support and advice for current students and applicants is available from the Disability Advisory and Support Service. Email: [admin@mgmibt.com](mailto:admin@mgmibt.com)

## PLACEMENTS AND CAREER OPPORTUNITIES

- Our graduates may choose to work in industry, academia or biotechnology companies. Career options include working as a microbiologist in the food industry, a geneticist in the field of medical research, or one of many other possibilities, such as in the pharmaceutical or agricultural sector.
- Microbiologists have plenty of job opportunities in sectors such as government and private hospitals, food industries, research and development organizations, chemical industries and pharmaceutical industries. They can also choose a career as science writer, writing articles for professional microbiologists or as a content writer and editor.
- They can work as an Agricultural and Food Scientists, Biochemists and Biophysicists, Biological Technicians, Chemical Technicians, Epidemiologists, Research assistant, Microbiologist, Cell Biologist, Mycologist or Virologist.

## ALUMNI

Our students were placed in different companies like Serum Institute, Bharat Biotech. Biological E. Limited. Bartronics, Bioserve. GVK Biosciences Private Limited. Ocium, BioSolutions Limited.

## INDUSTRY COLLABORATION

At the MGMUIBT we know the value of working together. We break down barriers and get involved; we collaborate across disciplines, cultures to solve state, national and global problems; and we transform people's lives by making positive change across India and the world.

Partner with us today, and discover what a difference we could make to your-our-future. We engage with big companies to small scale companies like Mahyco, wockhardt, Metahelix, Jindal seeds, Ulman Lab, Matrix Life sciences, Probus, CFTRI, NIN, CIFE.



### Contact us

Admission: <https://mgmu.ac.in/admissions/>

Email: [admin@mgmibt.com](mailto:admin@mgmibt.com) and [director@mgmibt.com](mailto:director@mgmibt.com); Website: [www.mgmibt.com](http://www.mgmibt.com)

University website: <https://mgmu.ac.in/>; Mobile: 9921154640

MGM University, established by the widely revered Mahatma Gandhi Mission Trust, is a self-financed State University. It has the 2(f) status of the University Grants Commission of India (UGC) and is approved by the Government of Maharashtra.

**MGM Institute of Biosciences & Technology** is a constituent college of **MGM University** from 2019. The institute has excellent infrastructure, and students can access all the facilities, in the areas of sports and culture, in the environs of the green, safe, and eco-friendly, **MGM Campus**.