MGM UNIVERSITY
AURANGABAD

INSTITUTE OF BIOSCIENCES & TECHNOLOGY

PROFESSIONAL PG-DEGREE PROGRAM

M.SC. (PLANT BIOTECHNOLOGY)

Professional Degree Awarded	**M.Sc. Masters of Science**
Duration of the Degree Program	**Two Years Research Program**
Semester	**Four (4)**
Intake	**20**
Tuition Fee	**Rs. 90,000/-**

PROGRAM OVERVIEW

- This program focuseson study of plant biology with the help of new tools and technologies. It aims to enable the students to get an overview of a range of modern techniques and methodologies that underpin contemporarybimolecular plant sciences.
- The programme seeks to empower the students with technical skill-set and capacities to build a bright career in key domains of biotechnology like:

o Research &Development (Academic & Industrial Sectors), Bio business companies, Breweries, Seed industries, pharmacy, Dairy, Forensics and plant diagnostic centre This is achieved through a combination of interdisciplinary curricula as well as intensive laboratory work. Through its unique pedagogical methods, the academic programme allows transferability of acquired skills in domains unrelated to biotech sectors.

- The program providesan advanced level education and research in Plant Biotechnology to explore sustainable solutions for agriculture, environment and energy sectors.

PROGRAM DESCRIPTION

- The program provides specialist training in the modern molecular aspects of plant science and its application to plant biotechnology.
- It enables you to learn about the science behind Plant Biotechnologywhile also looking at how to succeed in a career in the bio industry.
- Our group enterprise projects, which involve close collaboration with entrepreneurs, provide a great opportunity for you to stand out from other graduates.

SPECIAL FEATURES

- The Program is designed to build a strong foundation comprising of theoretical knowledge as well as specialized practical training
- You'll also explore a wide range of approaches used in bio-imaging and their relative advantages and disadvantages for analysing protein and cellular function
- You'll learn from the research of international experts in DNA recombination and repair mechanisms and their importance for transgene integration and biotechnological applications; plant nutrition and intracellular communication; and the biosynthesis, structure and function of plant cell walls.
- In the final part of the course, you'll choose and undertake an independent laboratory-based research project on a specific topic in plant science. You'll receive extensive training in experimental design, the practical use of advanced techniques and technologies, data analysis and interpretation, and will be assigned a research project supervisor who will support and guide you through your project.
- The program will provide you exposure to various fields of life sciences with its application in Plant Biotechnology.
- Provide the basic and advanced academic, research, and industry-based curriculum consistingcore, advanced, optional, and specific courses for the holistic development of students in life science
- It will prepare you for campus recruitment.

PROGRAM STRUCTURE

- Two-year program with68 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 Plant Biotechnology 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

The program curriculum provides ample opportunity to the students to specialize in different areas of Biotechnology including Tissue and Cell Culture,Recombinant DNA, Micro-Propagation, Plant Protection, Herbicide Resistances, Insect Pests and Disease Resistance, 'Plant Tissue Culture', 'Genomics', 'Molecular Breeding' and 'Genetic Transformation'. Molecular biology, Genetic engineering,RDT, Immunology, Advance techniques of Biochemistry, Fermentation technology,Fundamentals ofGenetics, Environmental Biotechnology: Concept &Application Structural Genomics &Proteomics, Plant Breeding for Stress Environments, Molecular Diagnosis &Immunology, Nano-Biotechnology Genetics, Plant Breeding & molecular Genetics in last year Research program etc.

TEACHING AND LEARNING

- In this program, you'll learn through a wide range of teaching methods including formal lectures, interactive workshops, problem-solving, practical classes and demonstrations. The course is designed to develop independent thinking, problem-solving, communication skills and practical ability in the students, making them competent candidates for the employers or providing an excellent foundation for further study.

- A large part of your teaching will be delivered by academics from the University's Centre for Plant Sciences (CPS) linked to the latest research in their areas of expertise.
- In this course you will be taught by our highly qualified faculties. You may also be taught by industry professionals with years of experience, as well as trained postgraduate researchers, connecting you to some of the brightest minds on campus.
- Education is by theory, practical, tutorials, seminars and supervised research projects. The syllabus is based on bloom's taxonomy. Students will learn though practical oriental 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 biological and biomedical techniques. Below are a few of them:
- Polymerase chain reaction (PCR); DNA sequencing;gel electrophoresis, Tissue culturing, Recombinant DNA, Micro-Propagation, Plant Protection.
- 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

- Through your research project and specialist plant science modules, you'll receive substantial subject-specific training. Our teaching and assessment methods are designed to develop you into a scientist who is able to think independently, solve problems, communicate effectively and demonstrate a high level of practical ability.
- You'll also apply your knowledge to an extended practical investigation in the form of a laboratory-based mini-project, involving practical training in a range of modern molecular biology and protein engineering techniques such as gene cloning, PCR, mutagenesis, protein expression, protein purification and analysis.
- 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 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, bioinformatics or enterprise topics.

COURSEWORK AND ASSESSMENT

- The course is 100% coursework assessed. There are a range of assessments in different formats for example practical work, data handling and problem-solving exercises, group work, literature reviews, research paper critiques, posters and oral presentations. Your individual research project is written up in research paper format.
- The relative weightage to the various examinations conducted, 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. Assessment will happen at the end of each semester.

DISABILITY SUPPORT

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

PLACEMENTS AND CAREER OPPORTUNITIES

- The strong research element of the plant science and biotechnology, coupled with the specialist and generic skills, mean you'll befully-equipped for a wide range of careers. Many graduates of the programme progress to Ph. D. study, others to different aspects of plant science-related research as well as a wide range of graduate-level occupations.Our graduates may choose to work in industry, academia or to work for a biotechnology company.
- 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.You are not limited to the biotechnology industries, however, and may go into a variety of careers. Find out more about how we help our students prepare for the workplace and the careers our post graduates go into within and outside the lab.

ALUMNI

Our students were placed in different companies like Serum Institute, Pfizer, Wockhardt, Mahyco, Bejosheetal, Ajit seed, Serum, Lupin, Biocon, Aptuit Informatics, Bigtec, BioImages India, Innoplexus, Genotype, Helix Infosystem, Mascon life Science, Novo Informatics, Krushidhan, Ocimum Biosolution, Infosys, Wipro, Dr. Reddy's Lab, GlaxoSmithkline, Novozyme, FDC, Harman, Panacea Biotech, Reliance Life Sciences, Bio era, Ankur seeds, Nath Seeds, Sygene International, Monsanto India, DuPont, Nuziveedu Seeds, Jindal Seeds, Advanta Limited, Rallies India, Metahelix , Springer, Krushidhan, Dr. Reddys, Biocon, National Institute of Virology, National Chemical Lab, Government agriculture department and university, Government and private colleges etc.

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 the India and 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

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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**.