



FACULTY OF
SCIENCE AND
HEALTH SCIENCE



2024 - 25

M.Sc. Biotechnology

Programme Structure

Division	Faculty of Sciences and Health Science
School Name	School of Sciences and Environmental Studies
Department Name	Department of Biosciences and Technology
Programme Name	M.Sc. Biotechnology

Credit Distribution

Course Type	Description
Programme Core	Courses dealing with foundations, depth and breadth of the major in which a student is admitted at MIT-WPU
Programme Electives	Open electives under the Programme allow students to specialise in a particular area connected to their major.
University Core	Courses that reflect the core MITWPU values and the mission of Life Transformation of students.
University Electives	Multidisciplinary courses across the faculties at MIT-WPU and outside the Programme core.

Semester 1

Sr. No.	Course Type	Course Name / Course Title	Total Credits
1	PF	Biochemistry	2
2	PF	Microbiology	2
3	PF	Molecular and Cell Biology	2
4	PM	Biostatistics	3
5	PM	Biotechnology Lab – 01	3
6	PM	Research Methodology	4
7	PE	Programme Elective-01	4
8	UC	Scientific Studies of Mind, Matter, Spirit and Consciousness	2
9	UC	Yoga	1

Elective Tracks | Semester 1

	Track 1: MBT7PE11A	Track 2: MBT7PE21A	Track 3: MBT7PE31A	Track 4: MBT7PE41A
Elective Track	Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Name of the course	Programming Languages for Biologists	Stem Cell Biology	Plant Biotechnology	Enzyme Technology

Semester 2

Sr. No.	Course Type	Course Name / Course Title	Total Credits
1	PM	Bioanalytical Techniques	3
2	PM	Bioprocess Technology	3
3	PM	Biotechnology Lab – 02	3
4	PM	Genomics & Genetic Engineering	3
5	PM	Immunology	3
6	PE	Programme Elective-02	4
7	UC	Peacebuilding: Global Initiatives	2
8	UC	Scientific Studies of Mind, Matter, Spirit and Consciousness	2

Elective Tracks | Semester 2

	Track 1: MBT7PE12A	Track 2: MBT7PE22A	Track 3: MBT7PE32A	Track 4: MBT7PE42A
Elective Track	Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Name of the course	Design and Analysis of Algorithms in Biology	Tissue Engineering and Biomaterials	Food Biotechnology	Advanced Bioprocess Technology

Semester 3

Sr. No.	Course Type	Course Name / Course Title	Total Credits
1	PM	Computational Biology & Bioinformatics	3
2	PM	Regenerative Biology & Stem Cell Technology	3
3	PM	Systems and Synthetic Biology	4
4	PE	Programme Elective-03	4
5	PR	On Job Training (OJT)/Internship	5
6	PR	Project	4

Elective Tracks | Semester 3

	Track 1: MBT8PE13A	Track 2: MBT8PE23A	Track 3: MBT8PE33A	Track 4: MBT8PE43A
Elective Track	Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Name of the course	Genomics and Proteomics	Cancer Biology	Pharmaceutical Biotechnology and Pharmacovigilance	Downstream Processing

Semester 4

Sr. No.	Course Type	Course Name / Course Title	Total Credits
1	PM	Bio-entrepreneurship, IPR & Bioethics	3
2	PM	Biomimetics & Nanobiotechnology	3
3	PM	Scientific Communication	2
4	PE	Programme Elective-04	4
5	PR	Project/Industrial Internship	10

Elective Tracks | Semester 4

	Track 1: MBT8PE14A	Track 2: MBT8PE24A	Track 3: MBT8PE34A	Track 4: MBT8PE44A
Elective Track	Bioinformatics	Medical Biotechnology	Industrial Biotechnology	Bioprocess Engineering
Name of the course	Computational Structural Biology	Molecular Diagnostics and Therapeutics	Environmental Biotechnology	Microbes for Energy and Fuels

*Modifications to the programmes and courses are contingent upon adherence to university guidelines and procedures. Any proposed changes must undergo a thorough review process, including consultation with relevant academic departments, approval from the appropriate administrative bodies, and compliance with accreditation standards.

Additionally, consideration will be given to feedback from students, faculty, and other stakeholders to ensure that modifications align with the overall educational objectives and mission of the university. The implementation of any approved changes will be communicated transparently to the university community, and appropriate measures will be taken to facilitate a smooth transition for all affected parties.