

University of Management & Technology, Lahore

Office of the Registrar, Johar Town C-II Lahore, Ph. #: 042-35212820



Roadmap

Program Name: BS Biotechnology

Program Scheme of Studies

Structure of the Scheme	
Courses Credit Hours	138
Major Courses: (Credit Hours)	22 (71)
Technical Electives: (Credit Hours)	4 (12)
Supporting Science: (Credit Hours)	4 (13)
University Electives: (Credit Hours)	2 (0)
Internship: (Credit Hours)	1 (3)
Capstone / COOP: (Credit Hours)	1 (4)
Undergraduate 2.0 courses: (Credit hours)	16 (35)
Total Credit Hours:	138

Program Road Map (BS Biotechnology) Applicable from Spring 2026

1 st Year							
1 st Semester				2 nd Semester			
Code	Course Title	Cr. Hrs.	Prerequisite	Code	Course Title	Cr. Hrs	Prerequisite
EN110	English-I	3		QM111	Quantitative Skills and Reasoning	3	
MA101	Calculus	3		BT201	Genetics	3	
IS135	Computer Applications	3		EN112	English-II	3	EN110
BT101	Cell Biology	3		HM113	Ideology and Constitution of Pakistan	2	
BT213	Microbiology	3+1		ITC122	Understanding of Quran-II	1	ITC111
ITC111	Understanding of Quran-I	1		BT202	Introduction to Biotechnology	3	
				MB204	Ecology and Biodiversity	3	
Semester Credit Hours		17		Semester Credit Hours		18	
2 nd Year							
3 rd Semester				4 th Semester			
Code	Course Title	Cr. Hrs.	Prerequisite	Code	Course Title	Cr. Hrs	Prerequisite
ISL101	Islamic Studies/Ethics	2		SD420	Arts and humanities (Foreign Language)	2	
BC309	Biochemistry-I	3+1		CH204	Physical Chemistry	3	
MK210	Social Sciences (Principles of Marketing)	2		SD210	Civics & Community Engagement	2	
XXX	Think AI	2		MG220	Innovation and Entrepreneurship	2	
BT307	Molecular Biology	3+1		BT304	Immunology	3	
CH211	Natural Science Elective (Everyday Science)	2		BC316	Biochemistry-II	3	BC309
POL101	Pakistan Studies	2		BT316	Genetic Engineering	3	
Semester Credit Hours		18		Semester Credit Hours		18	
3 rd Year							
5 th Semester				6 th Semester			
Code	Course Title	Cr. Hrs.	Prerequisite	Code	Course Title	Cr. Hrs	Prerequisite
BT302	Fundamentals of Forensic Sciences	3		SD102	21st Century Skills	0	
BT308	Microbial Biotechnology	3		BT314	Health Biotechnology	3	
SD100	English Immersion	0		BT301	Bioinformatics	3+1	
BC317	Enzymology	3+1		BT404	Industrial Biotechnology	3+1	
BT315	Environmental Biotechnology	3+1		BT423	Methods in Molecular Biology	3+1	
BT401	Food Biotechnology	3+1		SC401	Scientific Inquiry and Research Methods	3	
Semester Credit Hours		18		Semester Credit Hours		18	
4 th Year							
7 th Semester				8 th Semester			
Code	Course Title	Cr. Hrs.	Prerequisite	Code	Course Title	Cr. Hrs	Prerequisite
BT402	Agriculture Biotechnology	3		BT431	Genomics, transcriptomics and Proteomics	3	
BT423	Artificial Intelligence in Biosciences	3		xxx	Elective-III	3	
BT432	Biosafety Biosecurity and Bioethics	3		xxx	Elective-IV	3	
xxx	Capstone-I/ COOP-I	2		xxx	Capstone-II/ COOP-II	2	
xxx	Elective-I	3					
xxx	Elective-II	3					
Semester Credit Hours		17		Semester Credit Hours		11	

Mandatory: Internship of 3 Credit hours during the program.

Total Credit Hours: 138

List of Electives

Code	Course Title	Credit Hours
BT420	Commercialization of Biological Products	3
BT413	Cell and Tissue Culture	3
MB202	General Virology	3
BT419	Laboratory Quality Assurance and Quality Control	3
BT427	Animal Biotechnology	3
BT425	Marine Biotechnology	3
BT417	Biochemistry of Drugs and Resistance	3
BT426	Biosensors	3
BT416	Pharmaceutical Biotechnology	3
MB416	Epigenetics	3
BC401	Human Physiology	3
BT421	Nanobiotechnology	3

Note: Electives may be offered based on faculty availability and alignment with national and international curricula. Relevant courses from other schools may also be offered.