

Program Road Map (BS Biochemistry) 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		EN112	English-II	3	
MA101	Calculus	3		QM111	Quantitative Skills and Reasoning	3	
IS135	Computer Applications	3		CH211	Natural Science Elective (Everyday Science)	2	
BC101	Cell Biology	3		BC202	Carbohydrates & Lipids	3	
MB203	Fundamentals of Microbiology	3+1		POL121	Ideology & Constitution of Pakistan	2	
ITC111	Understanding of Quran-I	1		BT201	Genetics	3	
				ITC122	Understanding of Quran-II	1	
Semester Credit Hours		17		Semester Credit Hours		17	
2 nd Year							
3 rd Semester				4 th Semester			
Code	Course Title	Cr. Hrs.	Prerequisite	Code	Course Title	Cr. Hrs	Prerequisite
BT202	Introduction to Biotechnology	3		BC313	Metabolism and Bioenergetics	3	BC202
MK210	Social Sciences (Principles of Marketing)	2		SD420	Arts and humanities (Foreign Language)	2	
ISL101	Islamic Studies/Ethics	2		BT316	Genetic Engineering	3	
BC310	Proteins & Nucleic Acids	3+1		SD210	Civics & Community Engagement	2	
POL101	Pakistan Studies	2		BT304	Immunology	3	
XXX	Think AI	2		CH204	Physical Chemistry	3	
BT307	Fundamentals of Molecular Biology	3+1		MG220	Innovation and Entrepreneurship	2	
Semester Credit Hours		19		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 Science	3		BC311	Analytical Techniques in Biochemistry	3+1	
SD100	English Emersion	0		BC404	Industrial Biochemistry	3	
BC315	Environmental Biochemistry	3+1		SD102	21 st Century	0	
BC317	Enzymology	3+1		BC314	Clinical Biochemistry	3	
BC402	Nutritional Biochemistry	3+1		BT301	Bioinformatics	3+1	
BT308	Microbial Biotechnology	3		SC401	Scientific Inquiry and Research Methods	3	
Semester Credit Hours		18		Semester Credit Hours		17	
4 th Year							
7 th Semester				8 th Semester			
Code	Course Title	Cr. Hrs.	Prerequisite	Code	Course Title	Cr. Hrs	Prerequisite
BC423	Artificial Intelligence in Biosciences	3		BT432	Genomics, Transcriptomics & Proteomics	3	
BC431	Biosafety Biosecurity and Bioethics	3		xxx	Elective – III	3	
BC416	Plant Biochemistry	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: 137

List of Electives

Code	Course Title	Credit Hours
BT420	Commercialization of Biological Products	3
BT421	Nano-Biotechnology	3
BT413	Cell and Tissue Culture	3
MB202	General Virology	3
BT422	Proteomics and Genomics	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
MB403	Vaccinology	3
MB405	Aquatic Microbiology	3
MB404	Molecular Mechanism of Antimicrobial Agents	3
MB202	General Virology	3
MB204	Medical Microbiology	3
BC401	Human Physiology	3
BC312	Cancer Biology	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.