

**SCHEME OF STUDIES FOR 4-YEAR BACHELOR OF SCIENCE (BS) DEGREE IN
BIOTECHNOLOGY**

Year-1: Semester – I

Course Code	Subject	Credit Hours
URCE-5191	Grammar (C)	3(3+0)
URCP-5196	Pakistan Studies (C)	2(2+0)
MATH-5101	Mathematics – I: Pre Calculus	3(3+0)
CHEM-5101	Physical Chemistry (G)	4(3+1)
BIOT-5101	Introduction to Biotechnology (F)	3(3+0)
BIOT-5102	Biochemistry-I (F)	3(2+1)
	Total	18

Year 1: Semester – II

Course Code	Subject	Credit Hours
URCE-5192	Language Comprehension and Presentation Skills (C)	3(3+0)
URCI-5195	Islamic Studies / Ethics (C)	2(2+0)
MATH-6151	Bio Mathematics	3(3+0)
CHEM-5102	Inorganic Chemistry (G)	4(3+1)
BIOT-5103	Cell Biology (F)	3(2+1)
BIOT-5104	Biochemistry-II (F)	3(2+1)
	Total	18

Year 2: Semester – III

Course Code	Subject	Credit Hours
URCE-5193	Academic Writing (C)	3(3+0)
ICTC-5201	Introduction to information and communication Technologies (C)	3(2+1)
	Any subject from list of Social Sciences (G)	3(3+0)
BIOT-5105	Classical Genetics (F)	3(3+0)
BIOT-5106	Ecology, Biodiversity and Evolution - I (G)	3(3+0)
BIOT-5107	Microbiology (F)	3(2+1)
	Total	18

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Year 2: Semester – IV

Course Code	Subject	Credit Hours
BIOT-5108	Animal Physiology (G)	3(2+1)
BIOT-5109	Ecology, Biodiversity and Evolution - II (G)	3(2+1)
	Any subject from list of Social Sciences (G)	3(3+0)
BIOT-5110	Molecular Biology (F)	3(3+0)
CHEM-5103	Organic Chemistry (G)	4(3+1)
	Total	16

Year 3: Semester – V

Course Code	Subject	Credit Hours
BIOT-6111	Analytical Chemistry and Instrumentation(F)	3(2+1)
BIOT-6112	Bioinformatics (M)	3(1+2)
BIOT-6113	Methods in Molecular Biology (F)	3(2+1)
BIOT-6114	Immunology (F)	3(3+0)
BIOT-6115	Probability and Biostatistics (F)	3(3+0)
BIOT-6116	Principles of Biochemical Engineering (M)	3(2+1)
	Total	18

Year 3: Semester – VI

Course Code	Subject	Credit Hours
BIOT-6117	Recombinant DNA Technology (M)	3(2+1)
BIOT-6118	Microbial Biotechnology (F)	3(2+1)
BIOT-6119	Genetic Resources and Conservation (F)	3(3+0)
BIOT-6120	Agriculture Biotechnology (M)	3(2+1)
BIOT-6121	Genomics and Proteomics (M)	3(3+0)
BIOT-6122	Biosafety and Bioethics (C)	2(2+0)
	Total	17

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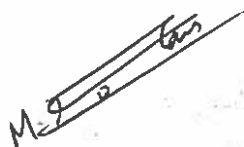
Year 4: Semester – VII

Course Code	Subject	Credit Hours
BIOT-6123	Research Methodology and Skills Enhancement (M)	3(3+0)
BIOT-6124	Environmental Biotechnology (M)	3(2+1)
BIOT-6125	Health Biotechnology (M)	3(3+0)
BIOT-xx	Seminar I	1(1+0)
BIOT-61xx	Elective – I	3(3+0)
BIOT-61xx	Research Project / Internship <u>OR</u> Special Paper - I (M)	3(3+0)
	Total	16

Year 4: Semester – VIII

Course Code	Subject	Credit Hours
BIOT-6126	Industrial Biotechnology (M)	3(2+1)
BIOT-6127	Food Biotechnology (M)	3(3+0)
BIOT-61xx	Elective II	3(3+0)
BIOT-61xx	Elective - III	3(3+0)
BIOT-61xx	Research Project / Internship <u>OR</u> Special Paper - II (M)	3(3+0)
BIOT-61xx	Seminar II (M)	1(1+0)
	Total	16

- * Research project will be offered on the basis of merit to students securing CGPA of 3.0/4.0 after completion of 6th semester and facilities available in the field of specialization. Remaining students shall have to opt two special papers, one from each list (I and II) in lieu of Research.

TOTAL CREDIT HOURS:**137 in 08 semesters (4 Years)**


LIST OF ELECTIVE/SPECIAL PAPER COURSES

		Cr. hr.
1. BIOT-6128	Cell and Tissue Culture	3(2+1)
2. BIOT-6129	Marine Biotechnology	3(3+0)
3. BIOT-6130	Molecular Biology of Insects and Insect Viruses	3(3+0)
4. BIOT-6131	Pharmaceutical Biotechnology	3(3+0)
5. BIOT-6132	Animal Biotechnology	3(3+0)
6. BIOT-6133	Fungal Biotechnology	3(3+0)
7. BIOT-6134	Water and Waste water Treatment	3(2+1)
8. BIOT-6135	Plant Biotechnology	3(2+1)
9. BIOT-6136	Biofertilizers And Biopesticides	3(3+0)
10. BIOT-6137	Nano-biotechnology	3(3+0)
11. BIOT-6138	Molecular Diagnostics	3(2+1)
12. BIOT-6139	Biosensors	3(3+0)
13. BIOT-6140	Virology	3(3+0)
14. BIOT-6141	Radiobiology	3(3+0)
15. BIOT-6142	Biofuels and Biorefineries	3(3+0)
16. BIOT-6143	Fermentation Biotechnology	3(2+1)
17. BIOT-6144	Enzymology	3(2+1)
18. BIOT-6145	Forensic DNA Typing	3(3+0)
19. BIOT-6146	Biotechnology for Pest Management	3(3+0)
20. BIOT-6147	Seminar I	1(1+0)
21. BIOT-6148	Seminar II	1(1+0)

The courses from the list can be taken depending upon the resources of the department.

M. S. S. S.
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