

**SCHOOL OF LIFE SCIENCE AND BIOTECHNOLOGY**

**UNDERGRADUATE COURSE STRUCTURE**

**B.Sc. BIOCHEMISTRY**

**BATCH 2024-28**

**SEMESTER I**

S.No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
1	CC	BIC101	Molecules of life	2	1	1	4	CC-1
2	CC	BIC102	Enzymes	2	1	1	4	CC-2
3	MDC	BIT105	Renewable energy resources	2	0	1	3	MDC1
4	AEC	AEC101	Communicative English-I	2	1	0	3	AEC1
5	Minor	100-199	To be chosen from a pool of minors	2	1	1	4	Minor1
6	VAC	VAC101	Environmental Education-I	2	0	0	2	VAC1
<b>Semester Credits</b>							<b>20</b>	
<b>SEMESTER II</b>								
7	CC	BIC103	Cell Science	2	1	1	4	CC-3
8	CC	MIB104	Bacteriology and Virology	2	1	1	4	CC-4
9	MDC	MIB106	Microbes for sustainable development	2	0	1	3	MDC2
10	SEC	SEC144	Forensic Science	1	0	1	2	SEC-1
11	VAC	VAC105	Community engagement and Social responsibility	1	0	0	2	VAC2
12	AEC	AEC102	Communicative English-II	2	1	0	3	AEC2
13	Minor	100-199	To be chosen from a pool of minors	2	1	1	4	Minor2
<b>Semester Credits</b>							<b>22</b>	
<b>SEMESTER III</b>								
14	CC	BIC201	Metabolism: carbohydrate and lipid	2	1	1	4	CC-5
15	CC	BIC202	Basics of plant and animal sciences	2	1	1	4	CC-6
16	MDC	BIT206	Introduction to Biomaterials	2	0	1	3	MDC3
17	Minor	CHM204	Spectroscopic methods of analysis	3	1	0	4	Minor3
18	AEC	AEC106	Professional Communication Skills	2	0	0	2	AEC3
19	SEC	SEC145	Clinical Biochemistry	1	0	1	2	SEC-2
20	VAC	VAC102	Human Values and Ethics	2	0	0	2	VAC3
21	PDC	PDC201	Professional development course-1	0	0	1	1	

Semester Credits							22	
<b>SEMESTER IV</b>								
22	CC	BIC203	Advanced microbiology	2	1	1	4	CC-7
23	CC	BIC204	Metabolism of amino acids and Nucleic acids	2	1	1	4	CC-8
24	CC	MIB205	Molecular Biology	2	1	1	4	CC-9
25	SEC	SEC146	Molecular diagnostics	1	0	1	2	SEC-3
26	Minor	200-299	To be chosen from a pool of minors	2	1	1	4	Minor4
27	VAC		To be chosen from subjects offered from University	2	0	0	2	VAC4
28	PDC	PDC202	Professional development course-2	0	0	1	1	
<b>Semester Credits</b>							<b>21</b>	
<b>SEMESTER V</b>								
29	CC	MIB301	Immunology	2	1	1	4	CC-10
30	CC	BIC302	Human physiology	2	1	1	4	CC-11
31	CC	BIC303	RDT and genetic engineering	2	1	1	4	CC-12
32	Minor	300-399	To be chosen from a pool of minors	2	1	1	4	Minor5
33	SEC	SEC142	IPR and Biosafety	1	1	0	2	SEC-4
34	INT	BIC304	Internship	0	0	4	4	
35	PDC	PDC301	Professional development course-3	0	0	1	1	
<b>Semester Credits</b>							<b>23</b>	
<b>SEMESTER VI</b>								
36	CC	MIB305	Bioinformatics	2	1	1	4	CC-13
37	CC	BIC306	Bioenergetics	2	1	1	4	CC-14
38	CC	BIC307	Nutrition and toxicology	2	1	1	4	CC-15
39	Minor	300-399	To be chosen from a pool of minors	2	1	1	4	Minor6
40	SEC	SEC147	AI in Biology	1	0	1	2	SEC-5
41	Project	BIC308	Project work on Biochemistry	0	0	4	4	
42	PDC	PDC302	Professional development course-4	0	0	1	1	
<b>Semester Credits</b>							<b>23</b>	
<b>Total Credits of the Program after 3<sup>rd</sup> Year</b>							<b>131</b>	
<b>SEMESTER VII</b>								

43	CC	BIC401	Plant Biochemistry	2	1	1	4	CC-16
44	CC	BIC402	Developmental Biology	2	1	1	4	CC-17
45	CC	BIC403	Genomics and Proteomics	2	1	1	4	CC-18
46	CC (For With research)	BIC404	Research Methodology for Biochemistry (should start working on dissertation topic)	3	1	0	4	CC-19 (Research)
47	CC (For Without research)	BIC405	Modern biochemical techniques and bioinstrumentation	3	1	0	4	CC-19(without Research)
48	Minor		To be chosen from a pool of minors	2	1	1	4	Minor7
49	PDC	PDC401	Professional development course-5	0	0	1	1	
<b>Total Semester Credit</b>							<b>21</b>	
<b>Semester VIII</b>								
50	CC	MIB406	Biostatistics and biomathematics	2	1	1	4	CC-20
51	CC (For Without research)	BIC407	Cancer Biology	2	1	1	4	CC-21 (without Research)
52	CC (For Without Research)	MIB408	Biomedical Nanotechnology	2	1	1	4	CC-22 (without Research)
53	Minor (For Without Research)	400-499	To be chosen from a pool of minors				4	Minor8
54	Minor (For With /without research)	400-499	To be chosen from a pool of minors				4	Minor8
55	Dissertation (For With research)	BIC409	Dissertation on Biochemistry	0	0	12	12	
<b>Total Semester Credit</b>							<b>20</b>	
<b>Total Credits of the Program after 4th Year</b>							<b>172</b>	

\*NOTE: With research is only allowed for Students **who secure 75% marks and above in the first six semesters**

### Minors to be offered by Department of Biological Sciences

Semester	Course Code	Courses	L	T	P	C
1	BIC151	Biomolecules	2	1	1	4
2	MIB152	Elementary cell science	2	1	1	4
3	BIC251	Basic metabolism	2	1	1	4
4	MIB252	Microbial Ecology	2	1	1	4
5	MIB351	Genetic engineering	2	1	1	4
6	BIC352	Basics of Nutrition and toxicology	2	1	1	4
7	BIC451	Introduction to Genomics and proteomics	2	1	1	4
8	MIB452	Fundamentals of Nanobiotechnology	2	1	1	4
9	BIC453	Drug Design and Development	2	1	1	4

### List of Multi-disciplinary courses to be offered by Department of Biological Sciences

Semester	Course Code	Courses	L	T	P	C
2	MIB106	Microbes for sustainable development	2	0	1	3
3	MIB203	Biomaterial Sciences	2	0	1	3