

University School of Biotechnology  
M.Sc. (Life Sciences) Programme

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S.No.	Code	Course Title	Credits
<b>SEMESTER 1</b>			
1	BtMSc 501	Biochemistry	3
2	BtMSc 503	Cell and Molecular Biology	3
3	BtMSc 505	Plant and Animal Biotechnology	3
4	BtMSc 507	Microbiology	2
5	BtMSc 509	Genetics	2
6	BTMA445	Basics of Mathematics and Biostatistics	3
7	BtMSc 511	Basics of Chemistry and Physics	2
8	BtMSc 513	Laboratory I: Biochemistry and Analytical Techniques	4
9	BtMSc 515	Laboratory II: Microbiology	2
10	BtMSc 517	Laboratory III: Plant and Animal Biotechnology	2
11	--	General Proficiency	0
<b>TOTAL</b>			<b>26</b>

<b>SEMESTER 2</b>			
1	BTLS 502	Human Physiology	3
2	BtMSc 504	Immunology	3
3	BtMSc 506	Bioinformatics	3

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4	BtMSc 508	Genomics and Proteomics	2
5	BTLS 504	Developmental Biology	2
6	BTMSc 512	Research Methodology and Scientific Communication Skills	2
7	--	Discipline Specific Elective ( <b>Choose any One</b> )	
		BT LS506 Introduction to Systems Medicine   BT MSc502 Genetic Engineering   BtMSc 518 Drug Discovery and Development   BTMsc542 Microbial Diversity and Metagenomics/ BTLS 508 Concept of Molecular Medicine	2
8	BTMSc 530	Seminar	1
9	BTLS 510	Laboratory I: Bioinformatics	2
10	BtMSc 534	Laboratory II: Immunology	2
<b>TOTAL</b>			<b>22</b>

<b>Specialization in Molecular Medicine</b>			
<b>SEMESTER 3</b>			
1	BTMSc 633	Host-Microbes Interaction	3
2	BTMSc 635	Molecular Basis of Human Diseases	3
3	BTLS601	Computational Systems Pharmacology	3
4	BTMSc 639	Stem Cell Biology and Regenerative Medicine	2
5	BtMSc 609	Intellectual Property Rights, Biosafety and Bioethics	2
6	BTMSc 641	Molecular Toxicology, Therapeutics and Diagnostic	2

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7	BtLS 603	Laboratory II: Computational Systems Pharmacology	2
9	BTMSc 643	Molecular Diagnostic & Pathology lab	2
10	BtMSc 619	Dissertation I	4
		Total credit	23

**Specialization in Bioinformatics and Genomics**

	Semester 3	
Code	Course	Credits
BTMSc 516	Computational Biology	3
BTMSc 621	Biomedical Genomics	3
BTMSc623	Agricultural Genomics	3
BTMSc 609	IPR, Biosafety and Bioethics	2
BTMSc546	Computational Programming through Python and R lab	3
BT MSc 631	Computational Biology and Genomics Lab	3
	Choose any one (Elective): Contemporary Genomics Research (BTLS 605), Systems and Synthetic Biology (BTMT627), Pharmacogenomics (BTMT621), Computer Aided Drug Design (BTLS607)	2
BT MSc 619	Dissertation I	4
<b>Total credits</b>		<b>23</b>

**Specialization in Systems Medicine**

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S.No.	Code	Course Title	Credits
<b>SEMESTER 3</b>			
1	BTLS 609	Systems Medicine and Computational Models	3
2	BTMSc611	Intellectual Property Rights, Biosafety and Bioethics	2
3	BTLS 613	Multiomics Technologies	3
4	BTLS 601	Computational Systems Pharmacology	3
4		<b>Elective Courses (Choose any three)</b>	
		BTLS611 -Medical Imaging	2
		BTLS613-Stem Cell Biology and Regenerative Medicine	2
		BTLS615- Precision Medicine	2
		BTLS617 Regulatory Affairs and GCP	2
		BTMSc510- Molecular Diagnostics	2
5	BTLS 603	Laboratory I: Computational systems pharmacology lab	2
6	BTMSc 615	Dissertation I	4
		<b>TOTAL</b>	<b>23</b>

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SEMESTER 4			
1	BtMSc 602	Dissertation II	22
2	--	General Proficiency	0
<b>TOTAL</b>			<b>22</b>

Total Credits 93