

**Program Details**  
**B.Sc. (Hons. with Research) Biomedical Science - 4 years program**

**Curriculum Structure**  
**B. Sc. (Hons. with Research) Biomedical Science**

SEMESTER I							
S. No	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Fundamentals of Cell Biology	Discipline Core Course 1	3	0	1	4
2.		Biochemistry	Discipline Core Course 2	4	0	0	4
3.		Human Physiology- I	Discipline Core Course 3	3	0	1	4
4.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 1				4
5.		Ecology and Environment	Ability Enhancement course-1	2	0	0	2
6.		Introduction to Python programming/ Graphical Tools	Skill Enhancement course- 1	1	0	1	2
7.		Health and Nutrition/First Aid	Value Added Course-1	2	0	0	2
			<b>TOTAL</b>				<b>22</b>
SEMESTER II							
S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Human Physiology -II	Discipline Core Course 4	4	0	0	4
2.		Toxicology and Pharmacology	Discipline Core Course 5	3	0	1	4
3.		Biotechnology	Discipline Core Course 6	3	0	1	4
4.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/	Generic Electives - 2				4

		Computer Science)					
5.		Logical Communication	Ability Enhancement course-2	1	0	1	2
6.		Essentials of IT Tools	Skill Enhancement course- 2	1	0	1	2
7.		Art of Happiness	Value Added Course-2	2	0	0	2
			<b>TOTAL</b>				<b>22</b>

### SEMESTER III

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Fundamentals of Molecular Biology	Discipline Core Course 7	3	0	1	4
2.		Introduction to Microbial World	Discipline Core Course 8	3	0	1	4
3.		Evolutionary and Developmental Biology	Discipline Core Course 9	4	0	0	4
4.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 3	4	0	0	4
5.		Critical Thinking & Writing	Ability Enhancement course-3	2	0	0	2
6.		Introduction to Artificial Intelligence	Skill Enhancement course- 3	2	0	0	2
7.		NCC/NSS/Social Internship/Vedic Mathematics	Value Added Course-3	2	0	0	2
			<b>TOTAL</b>				<b>22</b>

### SEMESTER IV

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Concept of Immunology	Discipline Core Course 10	3	0	1	4
2.		Gene Technology and Human Welfare	Discipline Core Course 11	3	0	1	4

3.		Bioinstrumentation & Biotechniques	Multi Disciplinary Course 1	3	0	0	3
4.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 4				4
5.		Disaster Management	Ability Enhancement Course-4	2	0	0	2
6.		One from the List of Choices	Skill Enhancement Course- 4	2	0	0	2
7.		Nanobiotechnology	Multi Disciplinary Course 2	3	0	0	3
			<b>TOTAL</b>				<b>22</b>

#### SEMESTER V

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Medical Biochemistry	Discipline Core Course 12	3	0	1	4
2.		Inheritance Biology	Discipline Core Course 13	3	0	1	4
3.		Research Methodology and Ethics	Multi Disciplinary Course 3	4	0	0	4
4.		DSE from Gp. 1	DSE-1				4
5.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Elective - 5				4
6.		Internship	Industrial/Academic Internship	0	0	2	2
			<b>TOTAL</b>				<b>22</b>

#### SEMESTER VI

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Hormones: Biochemistry and Function	Discipline Core 14	4	0	0	4
2.		Metabolism of Biomolecules	Discipline Core 15	3	0	1	4
3.		DSE from Gp. 1	DSE-2				4

4.		DSE from Gp. 1	DSE-3				4
5.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 6				4
6.		One from the List of choices	Skill Enhancement Course- 5	2	0	0	2
			<b>TOTAL</b>				<b>22</b>

**After 3 years, Students will get the degree of B.Sc. (Hons.) Biomedical Science with Total Credits=132**

**SEMESTER VII**

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Bioinformatics	Discipline Core Course 16	3	0	1	4
2.		DSE from Gp. 2	DSE-4				4
3.		DSE from Gp. 2	DSE-5				4
4.		DSE from Gp. 2	DSE-6				4
5.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 7				4
			<b>TOTAL</b>				<b>20</b>

**SEMESTER VIII**

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Dissertation	Dissertation				12
2.		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)/Minor Project	Generic Electives - 8				4
			<b>TOTAL</b>				<b>16</b>

**After 4 years, Students will get the degree of B.Sc. (Hons. with Research) Biomedical Science with Total Credits=168**

## Choices for Skill Enhancement Course- 4/5

Subject	L	T	P	Credits
Testing of cosmetics and hygienic products	1	0	1	2
Innovation and Entrepreneurship	2	0	0	2
Statistics with R	1	0	1	2
Electronic Product Testing	1	0	1	2
Fundamentals of Clinical Research	2	0	0	2
Social Media Crimes and Awareness	2	0	0	2
Graphical Tools	1	0	1	2
Latex writing	1	0	1	2

## List of Discipline Specific Electives (DSE)

### Infectious Microbiology Specialization

Category of Course	Subject	L	T	P	Credits
Elective-1	Parasitology	4	0	0	4
	Virology	4	0	0	4
Elective-2	Toxicology and Vector Biology	3	0	1	4
	Bacteriology	3	0	1	4
Elective-3	Pharmaceutical Microbiology	4	0	0	4
Elective-4	Genomics	4	0	0	4
	Phycology and Mycology	3	0	1	4
Elective-5	Metagenomics	3	0	1	4
	Food and Dairy Microbiology	3	0	1	4
Elective-6	Medical Microbiology	3	0	1	4

### Parasitology Specialization

Category of Course	Subject	L	T	P	Credits
Elective-1	Parasitology	4	0	0	4
	Virology	4	0	0	4
Elective-2	Toxicology and Vector Biology	3	0	1	4
	Bacteriology	3	0	1	4
Elective-3	Genetic disorders	4	0	0	4
	Plant Pathology	3	0	1	4
Elective-4	Genomics	4	0	0	4
	Phycology and Mycology	3	0	1	4
Elective-5	Metagenomics	3	0	1	4
Elective-6	Epigenetics and Chromatin Biology	4	0	0	4

### Medical Biochemistry Specialization

Category of Course	Subject	L	T	P	Credits
Elective-1	Clinical correlations of disease	4	0	0	4
Elective-2	Toxicology and Vector Biology	3	0	1	4
	Medical Biochemistry	3	0	1	4
Elective-3	Genetic disorders	4	0	0	4
Elective-4	Genomics	4	0	0	4
	Biochemistry of Metabolism	4	0	0	4
Elective-5	Metagenomics	3	0	1	4
	Bioorganic and Medicinal Chemistry	3	0	1	4
Elective-6	Epigenetics and Chromatin Biology	4	0	0	4
	Hormones: Biochemistry and Function	4	0	0	4

