

Program Structure
B.Sc. (Hons with research) Biochemistry

Course Category	For 4 years Program
Discipline Core Courses	64
Discipline Specific Electives (DSE)	24
Generic Electives	32
Multi-Disciplinary Courses (MDC)	10
Ability Enhancement Courses (AEC)	8
Skill Enhancement Courses (SEC)	10
Value Added Courses (VAC)	6
Industrial/Academic Internship	2
Dissertation	12
Total Credits	168

SEMESTER I							
S. No	Course Code	Course Name	Category of Course	L	T	P	Credits
		Fundamentals of Cell Biology	Discipline Core Course 1	3	0	1	4

		Biochemistry & Physiology	Discipline Core Course 2	4	0	0	4
		Bioorganic and Medicinal Chemistry	Discipline Core Course 3	3	0	1	4
		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 1				4
		Ecology and Environment	Ability Enhancement course-1	2	0	0	2
		Introduction to Python programming/ Graphical Tools	Skill Enhancement course- 1	1	0	1	2
		Health and Nutrition/First Aid	Value Added Course-1	2	0	0	2
			TOTAL				22

SEMESTER II

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
		Biochemistry of Metabolism	Discipline Core Course 4	4	0	0	4
		Toxicology and Pharmacology	Discipline Core Course 5	3	0	1	4
		Biotechnology	Discipline Core Course 6	3	0	1	4
		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 2				4
		Logical Communication	Ability Enhancement course-2	1	0	1	2
		Essentials of IT Tools	Skill Enhancement course- 2	1	0	1	2
		Art of Happiness	Value Added Course-2	2	0	0	2
			TOTAL				22

SEMESTER III

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
		Fundamentals of Molecular Biology	Discipline Core Course 7	3	0	1	4
		Introduction to Microbial World	Discipline Core Course 8	3	0	1	4
		Evolutionary and Developmental Biology	Discipline Core Course 9	4	0	0	4
		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 3	4	0	0	4
		Critical Thinking & Writing	Ability Enhancement course-3	2	0	0	2
		Introduction to Artificial Intelligence	Skill Enhancement course- 3	2	0	0	2
		NCC/NSS/Social Internship/Vedic Mathematics	Value Added Course-3	2	0	0	2
			TOTAL				22
SEMESTER IV							
S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
		Concept of Immunology	Discipline Core Course 10	3	0	1	4
		Gene Technology and Human Welfare	Discipline Core Course 11	3	0	1	4
		Bioinstrumentation & Biotechniques	Multi Disciplinary Course 1	3	0	0	3
		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 4				4
		Disaster Management	Ability Enhancement Course-4	2	0	0	2

		Cyber Sphere & Security Global Concern	Skill Enhancement Course- 4	2	0	0	2
		Nanobiotechnology	Multi Disciplinary Course 2	3	0	0	3
			TOTAL				22
SEMESTER V							
S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
		Medical Biochemistry	Discipline Core Course 12	3	0	1	4
		Inheritance Biology	Discipline Core Course 13	3	0	1	4
		Research Methodology and Ethics	Multi Disciplinary Course 3	4	0	0	4
		DSE from Gp. 1	DSE-1				4
		Generic Elective (Forensic Science/Maths/Chemistr y/Physics/Economics/ Computer Science)	Generic Elective - 5				4
		Internship	Industrial/Aca demic Internship	0	0	2	2
			TOTAL				22
SEMESTER VI							
S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
		Plant Biochemistry	Discipline Core 14	3	0	1	4
		Ecology, Ethology, Environmental Science and Wildlife	Discipline Core 15	4	0	0	4
		DSE from Gp. 1	DSE-2				4
		DSE from Gp. 1	DSE-3				4
		Generic Elective (Forensic Science/Maths/Chemistr y/Physics/Economics/ Computer Science)	Generic Electives - 6				4
		One from the List of choices	Skill Enhancement Course- 5	2	0	0	2
			TOTAL				22

After 3 years, Students will get the degree of B.Sc. (Hons.) Biochemistry with Total Credits=132							
SEMESTER VII							
S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
		Bioinformatics	Discipline Core Course 16	3	0	1	4
		DSE from Gp. 2	DSE-4				4
		DSE from Gp. 2	DSE-5				4
		DSE from Gp. 2	DSE-6				4
		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)	Generic Electives - 7				4
			TOTAL				20
SEMESTER VIII							
S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
		Dissertation	Dissertation				12
		Generic Elective (Forensic Science/Maths/Chemistry/Physics/Economics/Computer Science)/Minor Project	Generic Electives - 8				4
			TOTAL				16
After 4 years, Students will get the degree of B.Sc. (Hons. with Research) Biochemistry 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
			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