

## Program Details

### **B.Sc. (General) ZBC [Zoology, Botany, Chemistry] - 3 years program** **Scheme: 2023-26**

### Summary of Credits

Summary of credits	For 3 years
Discipline Core Courses	72
Discipline Specific Electives for Specialization	8
Generic Electives (Math/Chemistry/Physics/Economics/ Computer Science/Forensic Science)	24
Multi-Disciplinary Courses	7
Ability Enhancement Courses	8
Skill Enhancement Courses	10
Value Added Courses	6
Industrial/Academic Internship	2
Dissertation	-
<b>Total</b>	<b>137</b>

**Curriculum Structure**  
**B.Sc. (General) Zoology, Botany, Chemistry (ZBC)**

<b>SEMESTER I</b>							
<b>S. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category of Course</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
1.		Fundamentals of Cell Biology	Discipline 1; Core Course 1	3	0	1	4
2.		Biochemistry & Physiology	Discipline 2; Core Course 1	4	0	0	4
3.		Basic Concepts and Aliphatic Hydrocarbons	Discipline 3; Core Course 1	4	0	0	4
4.		Generic Elective (Forensic Science/Math/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	Skill Enhancement course- 1	1	0	1	2
7.		Health and Nutrition	Value Added Course-1	2	0	0	2
			<b>TOTAL</b>				<b>22</b>
<b>SEMESTER II</b>							
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category of Course</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
1.		Diversity of Non-Chordates and Chordates	Discipline 1; Core Course 2	4	0	0	4
2.		Microbiology & Plant Pathology	Discipline 2; Core Course 2	3	0	1	4
3.		Chemical Thermodynamics and Equilibrium	Discipline 3; Core Course 2	3	0	1	4
4.		Generic Elective (Forensic Science/Math/Chemistry /Physics/Economics/ Computer Science)	Generic Electives - 2				4
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.		Archegoniates & Plant Architecture	Discipline 1; Core Course 3	3	0	1	4
2.		Fundamentals of Molecular Biology	Discipline 2; Core Course 3	4	0	0	4
3.		Phase Equilibria and Chemical Kinetics	Discipline 3; Core Course 3	3	0	1	4
4.		Generic Elective (Forensic Science/Math/Chemistry /Physics/Economics/ Computer Science)	Generic Electives - 3				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 1; Core Course 4	3	0	1	4
2.		Gene Technology and Human Welfare	Discipline 2; Core Course 4	3	0	1	4
3.		Halogen and Oxygen Containing Functional Groups	Discipline 3; Core Course 4	3	0	1	4
4.		Generic Elective (Forensic Science/Math/Chemistry /Physics/Economics/	Generic Electives - 4				4

		Computer Science)					
5.		Disaster Management	Ability Enhancement Course-4	2	0	0	2
6.		Cyber Sphere & Security Global Concern	Skill Enhancement Course- 4	2	0	0	2
7.		Bioinstrumentation & Biotechniques	Multi-Disciplinary Course 1	3	0	0	3
			<b>TOTAL</b>				<b>23</b>
<b>SEMESTER V</b>							
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category of Course</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
1.		Flowering Plants Identification & Aesthetic Characteristics	Discipline 1; Core Course 5	3	0	1	4
2.		Inheritance Biology	Discipline 2; Core Course 5	3	0	1	4
3.		Co-ordination Chemistry	Discipline 3; Core Course 5	3	0	1	4
4.		Research Methodology and Ethics	Multi-Disciplinary Course 2	4	0	0	4
5.		Generic Elective (Forensic Science/Math/Chemistry /Physics/Economics/ Computer Science)	Generic Elective - 5				4
6.		Internship	Industrial/Academic Internship	0	0	2	2
			<b>TOTAL</b>				<b>22</b>
<b>SEMESTER VI</b>							
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category of Course</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
1.		Ecology, Ethology, Environmental Science and Wildlife	Discipline 1; Core Course 6	4	0	0	4
2.		Chronobiology	Discipline 2; Core Course 6	3	0	1	4
3.		Organometallic Chemistry	Discipline 3; Core Course 6	3	0	1	4
4.		DSE from Gp. 1	DSE-1				4
5.		DSE from Gp. 1	DSE-2				4
6.		Generic Elective (Forensic Science/Math/Chemistry /Physics/Economics/ Computer Science)	Generic Electives - 6				4

7.		One from the List of choices	Skill Enhancement Course- 5	2	0	0	2
			<b>TOTAL</b>				<b>26</b>
<b>After 3 years, Students will get the degree of B.Sc. (General) ZBC with Total Credits = 137</b>							

### 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

## List of Generic Electives (GE)

S.No.	Semester	Code	Course name	L	T	P	C	Discipline
1.	I		Fundamentals of Cell Biology	3	0	1	4	Life Sciences
2.	II		Biochemistry & Physiology	4	0	0	4	Life Sciences
3.	III		Introduction to Microbial World	3	0	1	4	Life Sciences
4.	IV		Fundamentals of Molecular Biology	3	0	1	4	Life Sciences
5.	V		Concept of Immunology	3	0	1	4	Life Sciences
6.	VI		Gene Technology and Human Welfare	3	0	1	4	Life Sciences
7.	VII		Microbial Physiology and Metabolism	4	0	0	4	Microbiology
8.	VIII		Microbial Genetics and Genomics	3	0	1	4	Microbiology
9.	VII		Human Physiology- I	3	0	1	4	Biomedical Science
10.	VIII		Human Physiology -II	4	0	0	4	Biomedical Science
11.	VII		Biochemistry of Metabolism	4	0	0	4	Biochemistry
12.	VIII		Bioorganic and Medicinal Chemistry	3	0	1	4	Biochemistry
13.	VII		Diversity of Non-Chordates, Parasitology and Economic Zoology	3	0	1	4	Zoology
14.	VIII		Diversity of Chordates and Comparative Anatomy	3	0	1	4	Zoology