

Program Structure
 of
B.Sc. (Hons.) Bioinformatics
 3 years program

Summary of Credits

Course Category	For 3 years Program
Discipline Core Courses	69
Discipline Specific Electives (DSE)	-
Generic Electives	24
Multi-Disciplinary Courses (MDC)	12
Ability Enhancement Courses (AEC)	8
Skill Enhancement Courses (SEC)	10
Value Added Courses (VAC)	7
Industrial/Academic Internship	2
Dissertation	NA
Total Credits	132

B.Sc. (H) Bioinformatics

Curriculum Structure

SEMESTER I							
S. No	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Basics of Cell Biology	Discipline Core Course-1	3	0	1	4
2.		Concepts of Biochemistry	Discipline Core Course-2	4	0	0	4
3.		Introduction to Bioinformatics and Biological Databases	Discipline Core Course-3	3	0	1	4
4.		Generic Elective (Chemistry/Biodiversity and Conservation/Clinical Science/Forensic Science/Sustainability)	Generic Elective - 1				4
5.		Ecology and Environment	Ability Enhancement course-1	2	0	0	2
1.		Essentials of IT Tools	Skill Enhancement Course- 1	1	0	1	2
2.		Food Nutrition and Hygiene/	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
1.		Python for Biological Data Analysis.	Discipline Core Course-4	3	0	1	4
2.		Basic Principles of Genetics	Discipline Core Course-5	3	0	1	4
3.		Essentials of Molecular Biology	Discipline Core Course-6	3	0	1	4
4.		Generic Elective (Chemistry/Biodiversity and Conservation/Clinical Science/Forensic Science/Sustainability)	Generic Elective - 2				4

5.		Logical communication	Ability Enhancement Course-2	2	0	0	2
6.		Mathematics for Biosciences	Skill Enhancement Course- 2	2	0	0	2
7.		Biostatistics for Biological Data Analysis	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
1.		Introduction to Omics Studies	Discipline Core Course-7	3	0	1	4
2.		R Programming	Discipline Core Course 8	3	0	1	4
3.		Essentials of Unix Command Line	Discipline Core Course-9	2	0	1	3
4.		Generic Elective (Chemistry/Biodiversity and Conservation/Clinical Science/Forensic Science/Sustainability)	Generic Elective – 3				4
5.		Bioinstrumentation and Biotechniques	Multi Disciplinary Course- 1	4	0	0	4
6.		Critical Thinking & Writing	Ability Enhancement Course-3	2	0	0	2
7.		Fundamentals of Computational Biology	Skill Enhancement Course- 3	2	0	0	2
			TOTAL				23

SEMESTER IV

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Immunology: Concepts and Applications	Discipline Core Course-10	3	0	1	4
2.		Biotechnology & Genetic Engineering	Discipline Core Course-11	3	0	1	4
3.		Genomics and Proteomics	Discipline Core Course-12	3	0	1	4
4.		Generic Elective (Chemistry/Biodiversity	Generic Elective – 4				4

		and Conservation/Clinical Science/Forensic Science/Sustainability)					
5.		Cyber Sphere and Security Global Concern	Ability Enhancement Course- 4	2	0	0	2
6.		NSS/NCC/Social Internship	Value Added Course-3	2	0	0	2
7.		Molecular Modelling and Computer Aided Drug Design	Multi-Disciplinary Course- 2	2	0	2	4
			TOTAL				24

SEMESTER V

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Immunoinformatics	Discipline Core Course-13	3	0	1	4
2.		Bioinformatics for Translational Medicine	Discipline Core Course-14	3	0	1	4
3.		Basics of Version Control with Git	Skill Enhancement Course- 4	1	0	1	2
4.		Research Methodology and Ethics	Multi-Disciplinary Course- 3	4	0	0	4
5.		Generic Elective (Chemistry/Biodiversity and Conservation/Clinical Science/Forensic Science/Sustainability)	Generic Elective – 5				4
6.		Internship	Industrial/Academic Internship				2
			TOTAL				20

SEMESTER VI

S. No.	Course Code	Course Name	Category of Course	L	T	P	Credits
1.		Molecular Phylogenetics and Evolution	Discipline Core Course-15	3	0	1	4
2.		Biological Data Analytics	Discipline Core Course-16	3	0	1	4
3.		Cheminformatics	Discipline Core Course-17	3	0	0	3

4.		Pharmacogenetics and Pharmacogenomics	Discipline Core Course- 18	3	0	1	4
5.		Generic Elective (Chemistry/Biodiversity and Conservation/Clinical Science/Forensic Science/Sustainability)	Generic Elective - 6				4
6.		AI in Bioscience and Technology	Skill Enhancement Course- 5	1	0	1	2
			TOTAL				21

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