

M.Sc. BIOINFORMATICS

**PROGRAM STRUCTURE AND SYLLABUS
2019-20 ADMISSIONS ONWARDS**

(UNDER MAHATMA GANDHI UNIVERSITY PGCSS REGULATIONS 2019)



MAHATMA GANDHI UNIVERSITY

2019

M.Sc. BIOINFORMATICS

(Mahatma Gandhi University Regulations PGCSS2019 from 2019-20 Academic Year)

1. Aim of the Program

To enable the students to apply the principles of biotechnology for the development of Science and society.

2. Eligibility for Admission

Any student who has bachelor's degree in Biochemistry, Biophysics, Biotechnology, Plant Biotechnology, Bioinformatics, Botany, Zoology/Plant Biology/Chemistry/Computer Science, Computer Application, Electronics, Environmental Science, Mathematics, Microbiology, Physics, Statistics or Life Science stream with a minimum of 50 % marks in aggregate from a recognized University or Part III Core Group (Core + Complementary + Open Courses) with not less than CGPA of 2.00 out of 4, can apply for the M. Sc Bioinformatics Program.

3. Medium of Instruction and Assessment

Course of study will be over a period of two academic years under semester system

a. Scheme of examination

The examinations for the award of degree consist of theory and practical papers, dissertation and comprehensive viva-voce. There will be examinations at end of each semester for theory and practical courses. Each semester consists of four theory papers and one practical examination for the first three semesters. The fourth semester has project presentation and evaluation and comprehensive viva-voce in addition to one practical examination and **three theory papers which are exclusively based on elective courses.**

b. Dissertation

Each candidate should submit a dissertation in four copies of the research project undertaken by him/her at the end of fourth semester for evaluation.

c. Comprehensive viva-voce

A comprehensive viva-voce will be held at the end of the fourth semester covering all the courses of the Programme taught in the entire four semesters.

4. Faculty under which the Degree is Awarded

M.Sc. Bioinformatics is offered in Faculty of Science

5. Specializations offered, if any

Nil



7. PROGRAMME STRUCTURE

Course Code	Title of the Course	Type of the Course	Hours per week	Credits	Total Credits
FIRST SEMESTER					
BT010101	Fundamentals Of Cell Biology And Biochemistry	Theory	4	4	19
BT010102	Introduction To Genetics And Molecular Biology	Theory	4	4	
BT010103	Fundamentals Of Applied Mathematics And Biostatistics	Theory	3	3	
BT010104	Introduction To Computing And Bioinformatics	Theory	4	4	
BT010105	Laboratory course I	Practical	10	4	
SECOND SEMESTER					
BT010201	Metabolism & Enzymology	Theory	4	4	19
BT010202	General Microbiology	Theory	4	4	
BT010203	Genomics	Theory	3	3	
BT010204	Bioinformatics & Perl	Theory	4	4	
BT010205	Laboratory course II	Practical	10	4	
THIRD SEMESTER					
BT010301	Immunology	Theory	4	4	19
BT010302	Proteomics & CADD	Theory	4	4	
BT010303	Database Concepts & Biological Databases	Theory	3	3	
BT010304	Advanced Bioinformatics & Linux Operating System	Theory	4	4	
BT010305	Laboratory course III	Practical	10	4	

Course Code	Title of the Course	Type of the Course	Hours per week	Credits	Total Credits
FOURTH SEMESTER					
BT800401		Genetic engineering & IPR	Elective	5	4
BT800402	Electives Group A	Bio programming	Elective	5	4
BT800403		Data Mining in Bioinformatics	Elective	5	4
BT810401		Java programming	Elective	5	4
BT810402	Electives Group B	Advanced genomics	Elective	5	4
BT810403		Research Methodology & Scientific Writing	Elective	5	4
BT820401		Basics of Nanotechnology	Elective	5	4
BT820402	Electives Group C	Pharmaceutical chemistry & action of Selected drugs	Elective	5	4
BT820403		Bioinformatics data analysis	Elective	5	4
BT010401	Laboratory course IV		Practical	10	4
BT010402	Research Project & dissertation				5
BT010403	Comprehensive Viva-Voce				2
					23

