Master of Science
Biochemistry

PROGRAMME STRUCTURE AND SYLLABUS
2019-20 ADMISSIONSONWARDS

(UNDER MAHATMA GANDHI UNIVERSITY PGCSS REGULATIONS 2019)

EXPERT COMMITTEE IN BIOCHEMISTRY (PG)
MAHATMA GANDHI UNIVERSITY

2019

M.Sc. Degree Programme

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

Aim of the Programme:

Biochemistry deals with thestudyof chemical processes of living systems. The M.Sc. Degree programme aims at providing an indepth understanding of the core principles of Biochemistry and their experimental aspects. This programme also aims a study on some of the emerging areas of Bioscience. The students get an overview of the recent trends, and will be able to annexe an updated information to their knowledge base. The major areas dealt with are:

- Structure function relationships, interaction between macromolecules and cellular processes at the molecular level.
- Tools and techniques used in biological analysis.
- Metabolic pathways,Clinical aspects, Energetics and Catalysis.
- Genetic engineering and Tissue culture.
- Pharmacology, Toxicology and Nanobiology.
- Research methodology, Legal rights of intellectual activity, problems and ethical issues related to Bioscience research.

1. Eligibility for Admissions

A candidate seeking admission to M.Sc. Biochemistry must have atleast 50%marks in biological sciences(Zoology, Botany, Biochemistry, Biotechnology, Microbiology) or Chemistry at the graduate level.

The admission to M.Sc Biochemistry PG Programme shall be as per the rules and regulations of the university.

2. Medium of Instruction and Assessment

The medium of instruction and assessment will be English.

Faculty under which the Degree is Awarded

Faculty of Science.

Specializations offered, if any

NIL

3. Note on compliance with the UGC Minimum Standards for the conduct and award of Post Graduate Degrees

The programme structure and syllabus of M.Sc Biochemistry complies with the minimum standards prescribed by the University Grants Commission. The M. Sc Biochemistry programme is under the Credit Semester Scheme, consisting of four semesters spread over a period of two years.

- Total credits is 80.
- Number of courses: Core courses - 12, Elective courses - 3, Laboratory courses – 4
- Evaluation: Internal assessment and external evaluation - 1:3 ratio.
- Grading: Direct grading system on a 7 point scale.

BC010304	Laboratory course III	Core course	10	04
FOURTH SEMESTER				
BC010401	Clinical Biochemistry	Core course	05	04
BC800402	Nutritional Biochemistry	Elective -2	05	03
BC810402	Research Methodology, IPR and Bioethics	Elective -2		
BC820402	Genomics and Proteomics	Elective -2		
BC800403	Plant and Animal Cell Culture	Elective -3	05	03
BC810403	Nanobiology	Elective -3		
BC820403	Ecology and Environmental Biochemistry	Elective -3		
BC010402	Laboratory course IV	Core course	10	05
BC010403	Project			05
BC010404	Viva Voce			03
Total Credits				**80**

GROUPS OF ELECTIVES

GROUP A	GROUP B	GROUP C
BC800301 Neurobiochemistry	BC810301 Biochemical Toxicology	BC820301 Pharmacological Biochemistry
BC800402 Nutritional Biochemistry	BC810402 Research Methodology, IPR and Bioethics	BC820402 Genomics and Proteomics
BC800403 Plant and Animal Cell Culture	BC810403 Nanobiology	BC820403 Ecology and Environmental Biochemistry

THE PROGRAMME STRUCTURE

Course Code	Title of the Course	Type of the Course	Hours per week	Credits
FIRST SEMESTER				
BC010101	Biomolecules and structural Biology	Core course	04	04
BC010102	Analytical Biochemistry and Bioinformatics	Core course	04	04
BC010103	Cell Biology and Genetics	Core course	04	04
BC010104	Human Physiology and Biostatistics	Core course	03	03
BC010105	Laboratory course I	Core course	**10**	04
SECOND SEMESTER				
BC010201	Metabolism and Bioenergetics	Core course	04	04
BC010202	Molecular Biology and Genetic engineering	Core course	04	04
BC010203	Immunology	Core course	04	04
BC010204	General Microbiology	Core course	03	03
BC010205	Laboratory course II	Core course	10	04
THIRD SEMESTER				
BC010301	Enzymology	Core course	04	04
BC010302	Plant Biochemistry	Core course	04	04
BC010303	Molecular Endocrinology	Core course	04	04
BC800301	Neurobiochemistry	Elective -1	03	03
BC810301	Biochemical Toxicology	Elective -1		
BC820301	Pharmacological Biochemistry	Elective -1		