PARUL UNIVERSITY

Office of the Registrar
January 20, 2025

R/Notification-1469/2024-25

NOTIFICATION

Sub: Revision in the Syllabus and Course Structure for M.Sc. in a) Biotechnology b) Biochemistry c) Microbiology d) Genetics in Faculty of Applied Sciences in the university from the a.y. 2024-25

Ref: (i) Proposal submitted by Dean, Faculty of Applied Sciences and Principal, PIAS
(ii) Orders of the Provost

PREAMBLE:
Dean, Faculty of Applied Sciences proposed revision in the syllabus and course structures for M.Sc. in a) Biotechnology b) Biochemistry c) Microbiology d) Genetics in Faculty of Applied Sciences in the university for the batch admitted to the said programme from AY 2024-25 onwards to the Provost. The Provost has approved the proposal. Hence, the Order.

ORDER:
Revised course structures for M.Sc. in a) Biotechnology b) Biochemistry c) Microbiology d) Genetics in Faculty of Applied Sciences in the university for the batch admitted to the said programme from AY 2024-25 onwards are enclosed in the Annexures.
Dean, Faculty of Applied Sciences shall arrange to upload revised syllabus, teaching and examination scheme of the said programme on MIS.

By Order

Registrar

To,
Dean, Faculty of Applied Sciences and Principal, PIAS

Copy to,
1) The Controller of Examinations
2) Director (IQAC)
3) PUMIS Coordinator

Submitted to,
1) The President
2) The Provost

ANNEXURE

M.Sc. in Biotechnology

Semester 1

Course No.	Subject	Credit
1	Metabolism and Bioenergetics	4
2	Bioinformatics and Biostatistics	4
3	Advanced Immunology	4
4	Advanced analytical tools and techniques	4
5	Advanced Enzymology	4
6	Molecular Biology	4
7	Lab-1 Bioinformatics & Analytical techniques	2
8	Lab-2 Immunology & Enzymology	2
	Total	**28**

Semester-2

Course No.	Subject	Credit
9	Bioprocess and fermentation technology	4
10	Animal Biotechnology	4
11	Plant Biotechnology	4
12	Recombinant DNA technology & Genetic engineering	4
13	Research Methodology & scientific writing	4
14	Elective Subject	4
15	Lab-1 Animal and Plant Biotechnology	2
16	Lab-2 Fermentation technology & Molecular	2

	Biology and Genetic Engineering	
	Total	**28**

Semester-3

Course No.	Subject	Credit
17	Good Lab Practices & Bioethics	4
18	Natural products and Molecular Medicine	4
19	Research/Dissertation	16
20	Elective Subject	4
	Total	**28**

Semester-4

Course No.	Subject	Credit
21	Research/Dissertation	20
	Total	**20**

ANNEXURE

M.Sc. in Biochemistry

Semester-1

Course No	Subject	Credit
1	Protein & Enzymes	4
2	Analytical techniques	4
3	Basic Biochemistry	4
4	Human Physiology	4
5	Cell & Molecular Biology	4
6	Immunology	4
7	Lab-1 Biochemical Analysis	2
8	Lab-2 Cytological techniques	2
	Total	28

Semester-2

Course No	Subject	Credit
9	Metabolism-I	4
10	Elective	4
11	Advanced enzymology	4
12	Advanced immunology	4
13	Recombinant DNA technology (Elective -1)	4
14	Environmental Ecology	4
15	Lab 1 -Advanced molecular techniques	2
16	Lab 2- Immunological techniques	2
	Total	28

Semester-3

Course No	Subject	Credit
17	Pharmacology & toxicology (Elective-1)	4
18	Clinical biochemistry	4
19	Elective	4
20	Research/ Dissertation	16
	Total	28

Semester-4

Course No.	Subject	Credit
21	Research/Dissertation	20
	Total	20

ANNEXURE

M.Sc. in Microbiology

Semester-1

Course No.	Subject	Credit
1	Microbial diversity and systematics	4
2	Biochemical pathways and microbial metabolism	4
3	Analytical techniques	4
4	Molecular virology	4
5	Advanced cell biology and genetic engineering processes	4
6	Lab-i (analytical techniques and molecular virology)	2
7	Lab-ii (advanced cell biology and genetic engineering processes)	2
	Total	**24**

Semester-2

Course No.	Subject	Credit
8	Food and dairy microbiology	4
9	Research methodology & scientific writing	4
10	Medical microbiology	4
11	Lab-1 immunology and medical microbiology	2

12	Lab-2 industrial microbiology	2
13	Industrial microbiology	4
14	Elective	4
	Total	**28**

Semester-3

Course No.	Subject	Credit
15	Agriculture microbiology	4
16	Bioinformatics & biostatistics	4
17	Elective	4
18	Dissertation	16
	Total	**28**

Semester-4

Course No.	Subject	Credit
19	Dissertation	20
	Total	**20**

ANNEXURE

M.Sc. in Genetics

Semester- 1

Code	Subject	Credit
1	Principles of Genetics	4
2	Cell and Molecular Biology	4
3	Analytical Techniques	4
4	Immunogenetics	4
5	Population Genetics	4
6	Elective Subject	4
7	Lab-1 Cell and Molecular Biology	2
8	Lab-2 Immunogenetics and Population Genetics	2
	Total	**28**

Semester-2

Code	Subject	Credit
9	Genetic Engineering and RDT	4
10	Bioinformatics	4
11	Epigenetics	4
12	Research Methodology and Biostatistics	4
13	Human Molecular Genetics	4
14	Elective Subject	4
15	Lab-1 Genetic Engineering and RDT	2
16	Lab-2 Bioinformatics	2
	Total	**28**

Semester-3

Code	Subject	Credit
17	Cancer Biology and Genetics	4
18	Genetic Epidemiology	4
19	Elective Subject	4
20	Research/ Dissertation	16
	Total	**28**

Semester-4

Course No.	Subject	Credit
21	Research/Dissertation	20
	Total	**20**