

**Bachelor of Science in Biotechnology**  
**[3 Years Regular/4 Years (Honours/honours with Research)]**

**Faculty of Applied Sciences**

**Parul University**

**Teaching and Examination Scheme for Batch 2023-24**

(**NOTE:** A credit is a unit by which the coursework is measured. It determines the number of hours of instruction required per week over the duration of a semester (Minimum 15 weeks/90 days))

1. 1 Theory Credit = 15 hours of academic activity engagement in a semester
2. 1 Credit of (Practical/Internship/workshop-based activity/ Self-Learning-Online/Offline) = 30 Hours of engagement in a semester
3. 1 Credit of Experiential learning (Field Visit/ Industry Visit)/ Assignments = 40-45 hours of engagement in a semester.
4. Research Project/Dissertation: Entire Seventh & Eighth Semesters (12 Credits)

**T = Theory , P = Practical , CE = Continuous Evaluation**

## Semester 1

[illegible]

## Semester 2

[illegible]

### Semester 3

[illegible]

## Semester 4

[illegible]

## Semester 5

[illegible]

**Semester 6**

|                   |              |                                                             |           | Teaching Scheme (Hours / Week) |     |     | Internal Marks |    |     | External Marks |    | Passing Marks (Theory + CE) | Passing Marks (Practical) | Total Marks |
|-------------------|--------------|-------------------------------------------------------------|-----------|--------------------------------|-----|-----|----------------|----|-----|----------------|----|-----------------------------|---------------------------|-------------|
| NCrF Credit Level | Code         | Subject                                                     | Credit    | Lect                           | Lab | Tut | T              | P  | CE  | T              | P  | Int.+Ext.                   | Int.+Ext.                 |             |
|                   |              | <b>Major (Discipline Specific Course)</b>                   |           |                                |     |     |                |    |     |                |    |                             |                           |             |
| <b>5.5</b>        | 11010206DS01 | Plant and Animal biotechnology                              | 4         | 4                              | -   | -   | 20             | -  | 20  | 60             | -  | 40                          | -                         | 100         |
|                   | 11010206DS02 | Genomics & Proteomics                                       | 4         | 4                              | -   | -   | -              | -  | -   | 60             | -  | 40                          | -                         | 100         |
|                   |              | <b>Elective</b>                                             |           |                                |     |     |                |    |     |                |    |                             |                           |             |
|                   | 11010206DS33 | Food and Agri Biotechnology                                 | 4         | 4                              | -   | -   | 20             | -  | 20  | 60             | -  | 40                          | -                         | 100         |
|                   | 11010206DS32 | Environmental & Medical Biotechnology                       |           | 4                              | -   | -   | 20             | -  | 20  | 60             | -  | 40                          | -                         | 100         |
|                   | 11010206DS03 | Lab-1 Plant and animal biotechnology                        | 2         | -                              | 4   | -   | -              | 40 | -   | -              | 60 | -                           | 50                        | 100         |
|                   | 11010206DS04 | Lab-2 Genomics & Proteomics                                 | 2         | -                              | 4   | -   | -              | 40 | -   | --             | 60 | -                           | 50                        | 100         |
|                   |              | <b>Ability Enhancement Course -5</b>                        |           |                                |     |     |                |    |     |                |    |                             |                           |             |
|                   | 00019306AE01 | Professional Ethics and Communication                       | 2         | -                              | -   | -   | -              | -  | 100 | -              | -  | 40                          | -                         | 100         |
|                   | 11010206IN01 | <b>Internship/Mini Project-1</b> (in Major Specific Course) | 4         |                                | -   |     |                | 40 |     |                | 60 |                             | 50                        | 100         |
|                   |              | <b>Total</b>                                                | <b>22</b> |                                |     |     |                |    |     |                |    |                             |                           |             |

**Internship Guidelines:** 30 days (120 Hrs.)

**Semester 7**

|                   |              |                                                                                        |           | Teaching Scheme (Hours / Week) |     |     | Internal Marks |    |    | External Marks |    | Passing Marks (Theory + CE) | Passing Marks (Practical) | Total Marks |
|-------------------|--------------|----------------------------------------------------------------------------------------|-----------|--------------------------------|-----|-----|----------------|----|----|----------------|----|-----------------------------|---------------------------|-------------|
| NCrF Credit Level | Code         | Subject                                                                                | Credit    | Lect                           | Lab | Tut | T              | P  | CE | T              | P  | Int.+Ext.                   | Int.+Ext.                 |             |
| <b>6.0</b>        |              | <b>Major (Discipline Specific Course)</b>                                              |           |                                |     |     |                |    |    |                |    |                             |                           |             |
|                   | 11010007DS01 | Research Methodology                                                                   | 4         | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                   | 11010207DS02 | Bioinformatics                                                                         | 4         | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                   | 11010207DS03 | Bioprocess technology                                                                  | 4         | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                   | 11010207DS04 | Stem cell Biology                                                                      | 4         | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                   | 11010207IN01 | <b>On Job Training (OJT)- in Major Specific</b><br>(for Honours Degree)                | 6         | -                              | -   | -   | -              | 60 | -  | -              | 90 | -                           | 75                        | 150         |
|                   |              | <b>OR</b>                                                                              |           |                                |     |     |                |    |    |                |    |                             |                           |             |
|                   | 11010207RP01 | <b>Research Project in Major Specific course</b><br>(For Honours with Research degree) | 6         | -                              | -   | -   | -              | 60 | -  | -              | 90 | -                           | 75                        | 150         |
|                   |              | <b>Total</b>                                                                           | <b>22</b> |                                |     |     |                |    |    |                |    |                             |                           |             |

**Research Project Guidelines:**

Advanced – level disciplinary/interdisciplinary courses related to topic selection and research methodology and initial stage of research will be conducted like: determining the definition of the information needed, determining the methods of collection of qualitative and quantitative data, conducting secondary data analysis etc.

**On-the-Job Training Guidelines:** 45 days (180 Hrs.)

**Semester 8**

|                                      |              |                                                                                        |            | Teaching Scheme (Hours / Week) |     |     | Internal Marks |    |    | External Marks |    | Passing Marks (Theory + CE) | Passing Marks (Practical) | Total Marks |
|--------------------------------------|--------------|----------------------------------------------------------------------------------------|------------|--------------------------------|-----|-----|----------------|----|----|----------------|----|-----------------------------|---------------------------|-------------|
| NCrF Credit Level                    | Code         | Subject                                                                                | Credit     | Lect                           | Lab | Tut | T              | P  | CE | T              | P  | Int.+Ext.                   | Int.+Ext.                 |             |
| <b>6.0</b>                           |              | <b>Major (Discipline Specific Course)</b>                                              |            |                                |     |     |                |    |    |                |    |                             |                           |             |
|                                      | 11010208DS01 | Bionanotechnology                                                                      | 4          | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                                      | 11010208DS02 | Bioethics & Biosafety                                                                  | 4          | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                                      | 11010208DS03 | Transgenics and Recent Advances                                                        | 4          | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                                      | 11010208DS04 | Entrepreneurship Development & IPR                                                     | 4          | 4                              | -   | -   | 20             | -  | 20 | 60             | -  | 40                          | -                         | 100         |
|                                      | 11010208IN01 | <b>On Job Training (OJT) - in Major Specific</b><br>(for Honours Degree)               | 6          | -                              | -   | -   | -              | 60 | -  | -              | 90 | -                           | 75                        | 150         |
|                                      |              | <b>OR</b>                                                                              |            |                                |     |     |                |    |    |                |    |                             |                           |             |
|                                      | 11010208RP01 | <b>Research Project in Major Specific course</b><br>(For Honours with Research degree) | 6          | -                              | -   | -   | -              | 60 | -  | -              | 90 | -                           | 75                        | 150         |
|                                      |              | <b>Total</b>                                                                           | <b>22</b>  |                                |     |     |                |    |    |                |    |                             |                           |             |
| <b>Total Credit of the Programme</b> |              |                                                                                        | <b>176</b> |                                |     |     |                |    |    |                |    |                             |                           |             |

**Research Project Guidelines:**

The final semester will be devoted to seminar presentation, preparation and submission of research project report/dissertation. The project work/dissertation will be on a topic in the disciplinary programme of study or an interdisciplinary topic.

**On-the-Job Training Guidelines:** 45 days (180 Hrs.)

**Note:** Course Curriculum from 4<sup>th</sup> Semester up to 8<sup>th</sup> semester may undergo revision. Any revision to this effect will be uploaded on the University Website. Students are requested to visit the University Website for any updates related to the revision in the course curriculum or shall contact Dean/HoI/Hod for the same.