

**Course Structure & Curriculum**  
**B.Sc. Biotechnology & Microbiology**

| <b>Semester</b>             | <b>B.Sc. Biotechnology</b>     | <b>B.Sc. Microbiology</b>                          |
|-----------------------------|--------------------------------|--|
| <b>B.Sc. I</b>              | Fundamentals of Biochemistry   | Fundamentals of Biochemistry                       |
|                             | Cell Biology                   | Cell Biology                                       |
|                             | Human Health and Nutrition     | Introduction to Microbiology                       |
|                             | English Language               | English Language                                   |
|                             | Introduction to Computers      | Introduction to Computers                          |
|                             | Project Work                   | Project Work / Laboratory Orientation              |
| <b>B.Sc. II</b>             | Molecular Biology              | Molecular Biology                                  |
|                             | General Microbiology           | General Microbiology                               |
|                             | Immunology                     | Microbial Physiology                               |
|                             | Communication Skills           | Communication Skills                               |
|                             | Environment Education          | Environment Education                              |
| <b>B.Sc. III</b>            | Genetics                       | Genetics   |
|                             | Bio-analytical Techniques      | Bio-analytical Techniques                          |
|                             | Fundamental of Plant Sciences  | Medical Microbiology                               |
|                             | Fundamental of Animal Sciences | Food and Dairy Microbiology                        |
|                             | Pharmaceutics                  | Pharmaceutics                                      |
|                             | Disaster Management            | Disaster Management                                |
|                             | Mental Health and Mindfulness  | Mental Health and Mindfulness                      |
|                             | <b>B.Sc. IV</b>                | Bioenergetics and Metabolism                       |
| Genetic Engineering         | Genetic Engineering            |  |
| Animal Biotechnology        | Industrial Microbiology        |  |
| Plant Biotechnology         | Environmental Microbiology     |  |
| Basics of Ayurvedic Science | Basics of Ayurvedic Science    |  |
| Sanskrit                    | Sanskrit                       |  |
| Project Work                | Project Work                   |  |
| <b>B.Sc. V</b>              | Industrial Biotechnology       | Microbial Biotechnology                            |
|                             | Environmental Biotechnology    | Immunology   |
|                             | Bioinformatics                 | Bioinformatics                                     |
|                             | Pharmacology                   | Pharmacology                                       |
|                             | Summer Internship              | Summer Internship                                  |
| <b>B.Sc. VI</b>             | Molecular Modeling             | Molecular Modeling                                 |
|                             | Research Methodology           | Research Methodology                               |
|                             | Fungal Biotechnology           | Fungal Biotechnology                               |
|                             | Algal Biotechnology            | Algal Biotechnology                                |
|                             | Bioethics                      | Bioethics  |
| <b>B.Sc. VII</b>            | Advanced Genetic Engineering   | Advanced Medical Microbiology                      |
|                             | Genomics and Proteomics        | Microbial Genomics and Proteomics                  |
|                             | Bioprocess Engineering         | Fermentation Technology and Bioprocess Engineering |

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|-----------------------|--|--|
|                       | Pharmaceutical Biotechnology                 | Pharmaceutical Microbiology                |
|                       | Regulatory Affairs and Quality Assurance     | Quality Control and Regulatory Affairs     |
|                       | Seminar / Literature Review                  | Seminar / Literature Review                |
|                       | Minor Research Project – I                   | Minor Research Project – I                 |
| <b>B.Sc.<br/>VIII</b> | Advanced Cell and Molecular Biotechnology    | Applied Virology                           |
|                       | Biosensors and Diagnostic Biotechnology      | Microbial Diagnostics and Biosensors       |
|                       | Environmental and Agricultural Biotechnology | Advanced Environmental Microbiology        |
|                       | Entrepreneurship and Start-up Development    | Entrepreneurship and Start-up Development  |
|                       | Intellectual Property Rights and Biosafety   | Intellectual Property Rights and Biosafety |
|                       | Dissertation / Major Research Project        | Dissertation / Major Research Project      |
|                       | Viva Voce / Research Presentation            | Viva Voce / Research Presentation          |