

## **B.Sc. (Bio)**

### **Combination of Botany-Zoology-Chemistry**

- **Subject-1 Botany**
- **Subject-2 Zoology**
- **Subject-3 Chemistry**

| Semester                              | COURSECODE  | COURSE TITLE   | CREDIT |  |
|---------------------------------------|---|--|--------|--|
| <b>Semester-I</b>                     |   |  |        |  |
| <b>(a) Major I-Botany (Subject-I)</b> |   |  |        |  |
| <b>First Semester</b>                 | BOT 101   | Basics of Botany                                     | 2+0*   |  |
|                                       | BOT 102<br>(B040101T)                               | Microbiology & Plant Pathology                       | 4+0    |  |
|                                       | BOT 103<br>(B040102P)                               | Techniques in Microbiology & Plant Pathology         | 0+2    |  |
|                                       | <b>Major II-Zoology (Subject-2)</b>                 |  |        |  |
|                                       | ZOO101  | Basics of Zoology                                    | 2+0*   |  |
|                                       | ZOO102<br>B050101T                                  | Cytology, Genetics and Immunology                    | 4+0    |  |
|                                       | ZOO103<br>B050102P                                  | Cell Biology and Cytogenetics Lab                    | 0+2    |  |
|                                       | <b>Major III-Chemistry (Subject -3)</b>             |  |        |  |
|                                       | CHE101  | Basics of Chemistry                                  | 2+0*   |  |
|                                       | CHE102<br>(B020101T)                                | Fundamentals of Chemistry                            | 4+0    |  |
|                                       | CHE103<br>(B020102P)                                | Quantitative Analysis                                | 0+2    |  |
|                                       | <b>(b) Minor Elective</b>                           |  |        |  |
|                                       | ENG 100   | Basics of English                                    | 2+0    |  |
|                                       | URD 100   | Basics of Urdu                                       | 2+0    |  |
|                                       | FMV 100   | Basics of Visual Arts                                | 2+0    |  |
|                                       | STAT 100  | Data Science I                                       | 1+1    |  |
|                                       | MAT 100   | Foundation of Mathematics I                          | 2+0    |  |
|                                       | HIS 106   | Introduction to Deen Dayal Upadhyaya<br>(Compulsory) | 2+0    |  |
|                                       | PHI 100   | Introduction to Nath Panth                           | 2+0    |  |
|                                       | DSS 106   | Understanding Disaster                               | 2+0    |  |
| <b>(c) Minor Co-Curricular</b>        |   |  |        |  |
| NCC 100                               | National Cadet Corps                                | 0+2  |        |  |
| NSS 100                               | National Service Scheme                             | 0+2  |        |  |
| RR 100                                | Rovers & Rangers                                    | 0+2  |        |  |
| PHED 100                              | Sports (any)  | 0+2  |        |  |
| FMV 105                               | Cultural Activities                                 | 0+2  |        |  |
| HSC 100                               | Nutrition, Health and Hygiene                       | 2+0  |        |  |
| PSY 100                               | Communication Skills and Personality<br>Development | 2+0  |        |  |
| <b>(d) Minor Vocational</b>           |   |  |        |  |
| AEDU 100                              | Fashion Designing and Craft Designing               | 0+2  |        |  |
| AEDU 101                              | Education Information Technology                    | 0+2  |        |  |
| AEDU 102                              | Fashion Accessories                                 | 0+2  |        |  |

- Candidates have to choose one Basic/Introductory Course out of the three major subjects
- Minimum of 2 credits required for Minor/Elective, Minor/Vocational/and Minor Co-Curricular
- Minor/Vocational is qualifying.

| Semester                              | COURSECODE                                       | COURSE TITLE                                 | CREDIT |  |
|---------------------------------------|--|--|--------|--|
| <b>Semester-II</b>                    |  |  |        |  |
| <b>(a) Major I-Botany (Subject-I)</b> |  |  |        |  |
| <b>Second Semester</b>                | BOT 104<br>(B040201T)                            | Archegoniates & Plant Architecture           | 4+0    |  |
|                                       | BOT 104<br>(B040202P)                            | Land Plants Architecture                     | 0+2    |  |
|                                       | <b>Major II-Zoology (Subject-2)</b>              |  |        |  |
|                                       | ZOO 104<br>(B050201T)                            | Biochemistry and Physiology                  | 4+0    |  |
|                                       | ZOO105<br>(B050202P)                             | Physiological, Biochemical & Haematology Lab | 2+0    |  |
|                                       | <b>Major III-Chemistry (Subject -3)</b>          |  |        |  |
|                                       | CHE103<br>(B020201T)                             | Bioorganic and Medicinal Chemistry           | 4+0    |  |
|                                       | CHE104<br>(B020202P)                             | Biochemical Analysis                         | 0+2    |  |
|                                       | <b>(b) Minor Elective</b>                        |  |        |  |
|                                       | ENG 106  | Basics of English Speaking                   | 2+0    |  |
|                                       | STAT 200   | Data Science II                              | 1+1    |  |
|                                       | BOT 107  | Resource Management and Zero Waste Campus    | 2+0    |  |
|                                       | HND 100  | Rashtra Gaurav (Compulsory)                  | 2+0    |  |
|                                       | MAT 200  | Foundation of Mathematics II                 | 2+0    |  |
|                                       | DSS 100  | Concepts of War                              | 2+0    |  |
|                                       | DSS 200  | Disaster Management Mechanism in India       | 2+0    |  |
|                                       | <b>(c) Minor Co-curriculum</b>                   |  |        |  |
|                                       | NCC 100  | National Cadet Corps                         | 0+2    |  |
|                                       | NSS 100  | National Service Scheme                      | 0+2    |  |
|                                       | RR 100   | Rovers & Rangers                             | 0+2    |  |
| PHED 100                              | Sports (any)                                     | 0+2  |        |  |
| FMV 105                               | Cultural Activities                              | 0+2  |        |  |
| HSC 100                               | Nutrition, Health and Hygiene                    | 2+0  |        |  |
| PSY 100                               | Communication Skills and Personality Development | 2+0  |        |  |
| <b>(d) Minor Vocational</b>           |  |  |        |  |
| AEDU 101                              | Fashion Designing and Craft Designing            | 0+2  |        |  |
| AEDU 102                              | Education Information Technology                 | 0+2  |        |  |
| AEDU 103                              | Fashion Accessories                              | 0+2  |        |  |

- Minimum of 2 credits required for Minor/Elective, Minor/Vocational/and Minor Co-Curricular
- Minor/Vocational is qualifying.

| Semester                              | COURSECODE                                       | COURSE TITLE  | CREDIT |
|---------------------------------------|--|---|--------|
| <b>Semester-III</b>                   |  |   |        |
| <b>(a) Major I-Botany (Subject-I)</b> |  |   |        |
| <b>Third Semester</b>                 | BOT201<br>(B040301T)                             | Flowering Plants Identification & Aesthetic Characteristics | 4+0    |
|                                       | BOT202<br>(B040302P)                             | Plant Identification technology                             | 0+2    |
|                                       | <b>Major II-Zoology (Subject-2)</b>              |   |        |
|                                       | ZOO201<br>(B050301T)                             | Molecular Biology, Bioinstrumentation & Biotechniques       | 4+0    |
|                                       | ZOO202<br>(B050302P)                             | Bioinstrumentation & Molecular Biology Lab                  | 0+2    |
|                                       | <b>Major III-Chemistry (Subject -3)</b>          |   |        |
|                                       | CHE201<br>(B020301T)                             | Chemical Dynamics & Coordination Chemistry                  | 4+0    |
|                                       | CHE202<br>(B020302P)                             | Physical Analysis   | 0+2    |
|                                       | <b>(b) Minor Elective</b>                        |   |        |
|                                       | ENG 107  | Introduction to English Grammar and Usage                   | 2+0    |
|                                       | ENG 110  | Introduction to French Language                             | 2+0    |
|                                       | STAT 100   | Data Science I  | 1+1    |
|                                       | HIS 106  | Introduction to Pt. Deen Dayal Upadhyaya                    | 2+0    |
|                                       | MAT 100  | Foundation of Mathematics I                                 | 2+0    |
|                                       | PHI 100  | Introduction of Nathpanth                                   | 2+0    |
|                                       | <b>(c) Minor Co-curriculum</b>                   |   |        |
|                                       | NCC 100  | National Cadet Corps  | 0+2    |
|                                       | NSS 100  | National Service Scheme                                     | 0+2    |
|                                       | RR 100   | Rovers & Rangers  | 0+2    |
|                                       | PHED 106   | Physical Education and Yoga                                 | 0+2    |
| PHED 100                              | Sports (any)                                     | 0+2   |        |
| FMV 100                               | Cultural Activities                              | 0+2   |        |
| HSC 100                               | Nutrition, Health and Hygiene                    | 2+0   |        |
| PSY 100                               | Communication Skills and Personality Development | 2+0   |        |
| <b>(d) Minor Vocational</b>           |  |   |        |
| COMP 203                              | Animation  | 0+2   |        |
| COMM 203                              | Finance & Baking                                 | 0+2   |        |
| LAW 203                               | Cyber Laws                                       | 0+2   |        |

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- Minor/Vocational is qualifying.

| Semester                              | COURSECODE                                       | COURSE TITTLE   | CREDIT |
|---------------------------------------|--|---|--------|
| <b>Semester-IV</b>                    |  |   |        |
| <b>(a) Major I-Botany (Subject-I)</b> |  |   |        |
| <b>Forth Semester</b>                 | BOT 203<br>(B040401T)                            | Economic Botany, Ethnomedicine & Phytochemistry       | 4+0    |
|                                       | BOT 204<br>(B040402P)                            | Commercial Botany & Phytochemical Analysis            | 0+2    |
|                                       | <b>Major II-Zoology (Subject-2)</b>              |   |        |
|                                       | ZOO203<br>(B050301T)                             | Molecular Biology, Bioinstrumentation & Biotechniques | 4+0    |
|                                       | ZOO204<br>(B050302P)                             | Bioinstrumentation & Molecular Biology Lab            | 0+2    |
|                                       | <b>Major III-Chemistry (Subject -3)</b>          |   |        |
|                                       | CHE203<br>(B020401T)                             | Quantum Mechanics and Analytical Techniques           | 4+0    |
|                                       | CHE204<br>(B020402P)                             | Instrumental Analysis                                 | 0+2    |
|                                       | <b>(b) Minor Elective</b>                        |   |        |
|                                       | ENG 108  | Advanced Writing Skills and Critical Thinking         | 2+0    |
|                                       | STAT 200   | Data Science II                                       | 1+1    |
|                                       | BOT 107  | Resource Management and Zero Waste Campus             | 2+0    |
|                                       | HND 100  | Rashtra Gaurav (Compulsory)                           | 2+0    |
|                                       | MAT 200  | Foundation of Mathematics II                          | 2+0    |
|                                       | DSS 200  | Disaster Management Mechanism in India                | 2+0    |
|                                       | DSS 100  | Concepts of War                                       | 2+0    |
|                                       | <b>(c) Minor Co-curriculum</b>                   |   |        |
|                                       | NCC 100  | National Cadet Corps                                  | 0+2    |
|                                       | NSS 100  | National Service Scheme                               | 0+2    |
|                                       | RR 100   | Rovers & Rangers                                      | 0+2    |
| PHED 100                              | Sports (any)                                     | 0+2   |        |
| FMV 105                               | Cultural Activities                              | 0+2   |        |
| HSC 100                               | Nutrition, Health and Hygiene                    | 2+0   |        |
| PSY 100                               | Communication Skills and Personality Development | 2+0   |        |
| <b>(d) Minor Vocational</b>           |  |   |        |
| COMP 203                              | Animation  | 0+2   |        |
| COMM 203                              | Finance & Baking                                 | 0+2   |        |
| LAW 203                               | Cyber Laws                                       | 0+2   |        |

- Minimum of 2 credits required for Minor/Elective, Minor/Vocational/and Minor Co-Curricular
- Minor/Vocational is qualifying.

| Semester                              | COURSECODE                                       | COURSE TITLE   | CREDIT     |  |
|---------------------------------------|--|--|------------|--|
| <b>Semester-V</b>                     |  |  |            |  |
| <b>(a) Major I-Botany (Subject-I)</b> |  |  |            |  |
| <b>Fifth Semester</b>                 | <b>BOT 301</b><br>(B040501T)                     | Plant Physiology, Metabolism & Biochemistry                              | <b>4+0</b> |  |
|                                       | <b>BOT 302</b><br>(B040502T)                     | Molecular Biology & Bioinformatics                                       | <b>4+0</b> |  |
|                                       | <b>BOT 303</b><br>(B040503P)                     | Experiments in physiology, Biochemistry & molecular biology              | <b>0+2</b> |  |
|                                       | <b>BOT 304</b><br>( B040504R)                    | <b>Project in Botany for Pre-graduation</b>                              | <b>0+4</b> |  |
|                                       | <b>Major II-Zoology (Subject-2)</b>              |  |            |  |
|                                       | <b>ZOO301</b><br>(B050501T)                      | Diversity of Non-Chordates, Parasitological and Economic Zoology         | <b>4+0</b> |  |
|                                       | <b>ZOO302</b><br>(B050502T)                      | Diversity of Chordates and Comparative Anatomy                           | <b>2+0</b> |  |
|                                       | <b>ZOO303</b><br><b>(B050503P)</b>               | Lab on Virtual Dissection, Anatomy, Economic Zoology and Parasitological | <b>0+2</b> |  |
|                                       | <b>(c) Minor Co-curriculum</b>                   |  |            |  |
|                                       | NCC 100  | National Cadet Corps   | 0+2        |  |
|                                       | NSS 100  | National Service Scheme  | 0+2        |  |
|                                       | RR 100   | Rovers & Rangers   | 0+2        |  |
|                                       | PHED 100   | Sports (any)   | 0+2        |  |
|                                       | FMV 100  | Cultural Activities  | 0+2        |  |
| HSC 100                               | Nutrition, Health and Hygiene                    | 2+0  |            |  |
| PSY 100                               | Communication Skills and Personality Development | 2+0  |            |  |
| <b>(d) Minor Vocational</b>           |  |  |            |  |
| <b>PLC 101</b>                        | Industrial Training/ Project                     | <b>0+2</b>   |            |  |

- Minimum of 2 credits required for Minor Co-Curricular

| Semester                              | COURSECODE                                       | COURSE TITLE  | CREDIT     |  |
|---------------------------------------|--|---|------------|--|
| <b>Semester-VI</b>                    |  |   |            |  |
| <b>(a) Major I-Botany (Subject-I)</b> |  |   |            |  |
| <b>Sixth Semester</b>                 | <b>BOT 305</b><br>(B040601T)                     | Cytogenetics, Plant Breeding & Nanotechnology   | <b>4+0</b> |  |
|                                       | <b>BOT 306</b><br>(B040602T)                     | Ecology & Environment   | <b>4+0</b> |  |
|                                       | <b>BOT 307</b><br>(B040603P)                     | Cytogenetics, Conservation & Environment management   | <b>0+2</b> |  |
|                                       | <b>BOT308/</b><br>(B040604R)                     | <b>Project in Botany for Pre-graduation</b>   | <b>0+4</b> |  |
|                                       | <b>Major II-Zoology (Subject-2)</b>              |   |            |  |
|                                       | <b>ZOO304</b><br>(B050601T)                      | Evolutionary Biology and Developmental Biology  | <b>4+0</b> |  |
|                                       | <b>ZOO305</b><br>(B050602T)                      | Ecology , Ethology, Environmental Science and Wildlife                                      | <b>4+0</b> |  |
|                                       | <b>ZOO306</b><br>(B050603P)                      | Lab on Environmental Science, Behavioral Ecology, Developmental Biology, Wildlife, Ethology | <b>0+2</b> |  |
|                                       | <b>(c) Minor Co-curriculum</b>                   |   |            |  |
|                                       | NCC 100  | National Cadet Corps  | 0+2        |  |
|                                       | NSS 100  | National Service Scheme   | 0+2        |  |
|                                       | RR 100   | Rovers & Rangers  | 0+2        |  |
|                                       | PHED 100   | Sports (any)  | 0+2        |  |
|                                       | FMV 100  | Cultural Activities   | 0+2        |  |
|                                       | HSC 100  | Nutrition, Health and Hygiene   | 2+0        |  |
| PSY 100                               | Communication Skills and Personality Development | 2+0   |            |  |
| <b>(d) Minor Vocational</b>           |  |   |            |  |
| <b>PLC 101</b>                        | Industrial Training/ Project                     | <b>0+2</b>  |            |  |

- Minimum of 2 credits required for Minor Co-Curricular