

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of B.Sc. Biotechnology Entire

Departmental Teaching Evaluation Scheme

Course Structure under Three- Years UG Program

Department/Subject Specific Core or Major (DSC)

(as per NEP-2020 guidelines)

1. Title: Three Years UG degree in B.Sc. Biotechnology entire
2. Year of implementation: academic year 2023-24 onwards
3. Examination pattern: semester wise for Theory and Practicals
4. Structure of program:

B.Sc. Biotechnology entire- Semester- I & II

| Sr. No. | Course Abbr. | Course code | Course Name | Teaching Scheme Hours/week | | Examination Scheme and Marks | | | | Course Credits |
|---|--------------|-------------|---|----------------------------|-----------|------------------------------|------------|------------|------------|----------------|
| | | | | TH | PR | ESE | CIE | PR | Marks | |
| Semester-I | | | | | | | | | | |
| 1 | DSC-I | DSC07BTE11 | Biotechnology-I (Biotechnology for human welfare-I) | 2 | - | 40 | 10 | - | 50 | 2 |
| 2 | DSC-II | DSC07BTE12 | Biotechnology-II (Biochemistry-I) | 2 | - | 40 | 10 | - | 50 | 2 |
| 3 | MIN-I | MIN07BTE11 | Microbiology-I (Introduction to Microbial world) | 2 | - | 40 | 10 | - | 50 | 2 |
| 4 | MIN-II | MIN07BTE12 | Microbiology-II (Techniques in Microbiology) | 2 | - | 40 | 10 | - | 50 | 2 |
| 5 | OEC-I | OEC07BTE11 | (Bio-Instrumentation-I) | 2 | - | 40 | 10 | - | 50 | 2 |
| 6 | OEC-II | OEC07BTE12 | (Plant Sciences) | 2 | - | 40 | 10 | - | 50 | 2 |
| 7 | AEC-I | AEC06ENG11 | Business Communication-I | 2 | - | 40 | 10 | - | 50 | 2 |
| 8 | IKS-I | IKS07GEC11 | Indian Knowledge System | 2 | - | 25 | - | - | 25 | 2 |
| 9 | DSC-PR-I | DSC07BTE19 | Techniques in Biochemistry | - | 4 | - | - | 25 | 25 | 2 |
| 10 | MIN-PR-I | MIN07BTE19 | Lab exercises in Microbiology | - | 4 | - | - | 25 | 25 | 2 |
| 11 | OEC-PR-I | OEC07BTE19 | Techniques in Bioinstrumentation | - | 4 | - | - | 25 | 25 | 2 |
| Semester –I Total | | | | 16 | 12 | 305 | 70 | 75 | 450 | 22 |
| Semester-II | | | | | | | | | | |
| 1 | DSC-III | DSC07BTE21 | Biotechnology -III (Biotechnology for human welfare-II) | 2 | - | 40 | 10 | - | 50 | 2 |
| 2 | DSC-IV | DSC07BTE22 | Biotechnology-IV (Biochemistry-I) | 2 | - | 40 | 10 | - | 50 | 2 |
| 3 | MIN-III | MIN07BTE21 | Microbiology-III (Bacterial Cytology and Cultivation) | 2 | - | 40 | 10 | - | 50 | 2 |
| 4 | MIN-IV | MIN07BTE22 | Microbiology-IV (Virology) | 2 | - | 40 | 10 | - | 50 | 2 |
| 5 | OEC-III | OEC07BTE21 | (Ecology) | 2 | - | 40 | 10 | - | 50 | 2 |
| 6 | OEC-IV | OEC07BTE22 | (Animal Sciences) | 2 | - | 40 | 10 | - | 50 | 2 |
| 7 | AEC-II | AEC06ENG21 | Business Communication-II | 2 | - | 40 | 10 | - | 50 | 2 |
| 8 | VSC PR-I | VSC07BTE29 | Basics in Cell biology | - | 4 | - | - | 25 | 25 | 2 |
| 9 | DSC-PR-II | DSC07BTE29 | Techniques in Biotechnology | - | 4 | - | - | 25 | 25 | 2 |
| 10 | MIN-PR-II | MIN07BTE29 | Techniques in Bacterial Cytology Virology- | - | 4 | - | - | 25 | 25 | 2 |
| 11 | OEC-PR-II | OEC07BTE29 | Techniques in Plant & Animal Sciences | - | 4 | - | - | 25 | 25 | 2 |
| Semester –II Total | | | | 14 | 16 | 280 | 70 | 100 | 450 | 22 |
| Cumulative Total (1st Year) | | | | 30 | 28 | 585 | 140 | 175 | 900 | 44 |

B.Sc. Biotechnology entire- Semester- III & IV

| Sr. No. | Course Abbr. | Course code | Course Name | Teaching Scheme Hours/week | | Examination Scheme and Marks | | | | Course Credits |
|---|--------------|-------------|--|----------------------------|-----------|------------------------------|------------|------------|------------|----------------|
| | | | | TH | PR | ESE | CIE | PR | Marks | |
| Semester-III | | | | | | | | | | |
| 1 | DSC-V | DSC07BTE31 | Molecular Biology-I | 2 | - | 40 | 10 | - | 50 | 2 |
| 2 | DSC-VI | DSC07BTE32 | Metabolic Pathways - I | 2 | - | 40 | 10 | - | 50 | 2 |
| 3 | MIN-V | MIN07BTE31 | Microbial Genetics | 2 | - | 40 | 10 | - | 50 | 2 |
| 4 | MIN-VI | MIN07BTE32 | Environmental Microbiology | 2 | - | 40 | 10 | - | 50 | 2 |
| 5 | VSC PR-II | VSC07BTE39 | Techniques in Genetics | - | 4 | - | - | 25 | 25 | 2 |
| 6 | AEC-III | AEC07ENG31 | Communication Skills-I | 2 | - | 40 | 10 | - | 50 | 2 |
| 7 | VEC-I | VEC07DEG31 | Democracy, Election and Good Governance (DEGG) | 2 | - | 50 | - | - | 50 | 2 |
| 8 | VEC-II | VEC07EVS31 | Environmental Studies | 2 | - | 35 | - | 15 | 50 | 2 |
| 9 | DSC PR-III | DSCO7BTE39 | Techniques in Molecular Biology | - | 8 | - | - | 50 | 50 | 4 |
| 10 | MIN PR-III | MIN07BTE39 | Techniques in Environmental Microbiology | - | 4 | - | - | 25 | 25 | 2 |
| Semester –III Total | | | | 14 | 16 | 285 | 50 | 115 | 450 | 22 |
| Semester-IV | | | | | | | | | | |
| 1 | DSC-VII | DSC07BTE41 | Molecular Biology -II | 2 | - | 40 | 10 | - | 50 | 2 |
| 2 | DSC-VIII | DSC07BTE42 | Metabolic Pathways -II | 2 | - | 40 | 10 | - | 50 | 2 |
| 3 | MIN-VII | MIN07BTE41 | Immunology | 2 | - | 40 | 10 | - | 50 | 2 |
| 4 | MIN-VIII | MIN07BTE42 | Advances in Cell Biology | 2 | - | 40 | 10 | - | 50 | 2 |
| 5 | VSC PR - III | VSC07BTE49 | Basics in Forensic Sciences | | 4 | - | - | 25 | 25 | 2 |
| 6 | AEC-IV | AEC07ENG41 | Communication Skills-II | 2 | - | 40 | 10 | - | 50 | 2 |
| 7 | VEC-III | VEC07EVS41 | Environmental Studies | 2 | - | 35 | - | 15 | 50 | 2 |
| 8 | CC | CC06 | C0-Curricular Courses | 2 | - | 50 | - | - | 50 | 2 |
| 9 | DSC PR- IV | DSCO7BTE49 | Techniques in Metabolic Pathways | - | 8 | - | - | 50 | 50 | 4 |
| 10 | MIN PR-IV | MIN07BTE49 | Techniques in Immunology | - | 4 | - | - | 25 | 25 | 2 |
| Semester –IV Total | | | | 14 | 16 | 285 | 50 | 115 | 450 | 22 |
| Cumulative Total (2nd Year) | | | | 28 | 32 | 570 | 100 | 230 | 900 | 44 |

B.Sc. Biotechnology entire - Semester- V & VI

| Sr. No. | Course Abbr. | Course code | Course Name | Teaching Scheme Hours/week | | Examination Scheme and Marks | | | | Course Credits |
|---|--------------|-------------|--|----------------------------|-----------|------------------------------|------------|------------|-------------|----------------|
| | | | | TH | PR | ESE | CIE | PR | Marks | |
| Semester-V | | | | | | | | | | |
| 1 | DSC-IX | DSC07BTE51 | Basics in Genetic Engineering | 2 | - | 40 | 10 | - | 50 | 2 |
| 2 | DSC-X | DSC07BTE52 | Industrial Biotechnology | 2 | - | 40 | 10 | - | 50 | 2 |
| 3 | DSC-XI | DSC07BTE53 | Enzymology | 2 | - | 40 | 10 | - | 50 | 2 |
| 4 | DSC-XII | DSC07BTE54 | Research Methodology in Biotechnology | 2 | - | 40 | 10 | - | 50 | 2 |
| 5 | DSE-I | DSE07BTE51 | Animal Tissue Culture | 2 | - | 40 | 10 | - | 50 | 2 |
| 6 | VSC-PR-IV | VSC07BTE59 | Techniques in Enzymology | - | 4 | - | - | 25 | 25 | 2 |
| 7 | FP | FPR07BTE51 | Field Project | - | - | - | - | 50 | 50 | 2 |
| 8 | DSC-PR-V | DSC07BTE59 | Techniques in Genetic Engineering & Industrial Biotechnology | - | 16 | - | - | 100 | 100 | 8 |
| Semester –V Total | | | | 10 | 20 | 200 | 50 | 175 | 425 | 22 |
| Semester-VI | | | | | | | | | | |
| 1 | DSC-XIII | DSC07BTE61 | Advances in Genetic Engineering | 2 | - | 40 | 10 | - | 50 | 2 |
| 2 | DSC-XIV | DSC07BTE62 | Application of Biotechnology in Agriculture | 2 | - | 40 | 10 | - | 50 | 2 |
| 3 | DSC-XV | DSC07BTE63 | Biosafety Bioethics, and IPR | 2 | - | 40 | 10 | - | 50 | 2 |
| 4 | DSC-XVI | DSC07BTE64 | Bioinformatics | 2 | - | 40 | 10 | - | 50 | 2 |
| 5 | DSE-II | DSE07BTE61 | Plant Tissue Culture | 2 | - | 40 | 10 | - | 50 | 2 |
| 6 | VSC-PR-V | VSC07BTE69 | Techniques in Plant Tissue Culture | - | 4 | - | - | 25 | 25 | 2 |
| 7 | OJT | OJT07BTE61 | OJT | - | - | - | - | 50 | 50 | 2 |
| 8 | DSC-PR-VI | DSC07BTE69 | Techniques in Agriculture & Bioinformatics | - | 16 | - | - | 100 | 100 | 8 |
| Semester –VI- Total | | | | 10 | 20 | 200 | 50 | 175 | 425 | 22 |
| Cumulative Total (3rd Year) | | | | 20 | 40 | 400 | 100 | 350 | 850 | 44 |
| Three Year UG Degree in B.Sc. Biotechnology Entire | | | | | | | | | 2650 | 132 |

Abbr. TH-Theory, PR-Practical, ESE- End Semester Examination, CIE-Continuous Internal Examination

Note: Minimum passing for 25 marks Theory paper = 10 marks
 Minimum passing for 35 marks Theory paper = 14 marks
 Minimum passing for 40 marks Theory paper = 16 marks
 Minimum passing for 10 marks Internal evaluation = 04 marks
 Minimum passing for 25 marks Practical = 10 marks
 Minimum passing for 50 marks Practical = 20 marks
 Separate passing for every head- ESE, CIE and Practicals