

Mohanlal Sukhadia University

Udaipur

Department of Biotechnology



Syllabus and Scheme of Examination

For

M.Sc. CBCS Programme Biotechnology

Skill Enhancement Course Elective

| S.No. | Type of course | Semester | Course code | Title of the Course |
|-------|----------------|----------|-------------|---|
| 1. | Skill course 1 | II | M2BT07SEC01 | Skill course elective 1 (Techniques of Molecular Biology) (any one) |
| 2. | Skill course 2 | III | M3BT08SEC02 | Skill course elective 2 (Techniques of Plant Biotechnology) (any one) |

Discipline Specific Elective

| S.No. | Type of course | Semester | Course code | Title of the Course |
|-------|-----------------------------------|----------|-------------|--|
| 1. | A. Industrial Training | IV | | Major Research Project (at research laboratory or institute of repute (5 months) |
| 2. | B. | | | |
| 3. | Discipline Specific Elective 1 | IV | M4BT01ET01 | Minor Research Project (Compulsory) |
| 4. | Discipline Specific Elective 2(a) | IV | M4BT02ET02 | Agriculture Biotechnology |
| 5. | Discipline Specific Elective 2(b) | IV | M4BT03ET02 | Biosafety, Bioethics and IPR |
| 6. | Discipline Specific Elective 3(a) | IV | M4BT04ET03 | Food and Dairy Biotechnology |
| 7. | Discipline Specific Elective 3(b) | IV | M4BT05ET03 | Advanced Biotechnology |
| 8. | Discipline Specific Elective 4(a) | IV | M4BT05ET04 | Medical and Pharmaceutical Biotechnology |
| 9. | Discipline Specific Elective 4(b) | IV | M4BT05ET04 | Host-Parasite Interactions |

Discipline Specific Elective Practical

| S.No. | Type of course | Semester | Course code | Title of the Course |
|-------|---|----------|-------------|------------------------|
| 1. | Discipline Specific Elective practical 1, | IV | M4BT06EP01 | Based on Choice of DSE |
| 2. | Discipline Specific Elective practical 2 | IV | M4BT07EP02 | Based on Choice of DSE |

UNIT I**Credit hours: 6**

Instrumentation in Molecular Biology.

UNIT II**Credit hours: 6**

Isolation and purification of Genomic DNA, Quantitative and Qualitative Analysis of Nucleic acids, Isolation and purification of Plasmid DNA

UNIT III**Credit hours: 6**

Agarose Gel Electrophoresis, SDS Poly Acrylamide Gel Electrophoresis for Protein Native Poly Acrylamide Gel Electrophoresis

UNIT IV**Credit hours: 6**

Restriction Digestion, PCR Techniques

UNIT V**Credit hours: 6**

Isozyme analysis

BT SEC2: (M3BT07SEC02): TECHNIQUES OF PLANT BIOTECHNOLOGY**TOTAL HOURS: 30****CREDITS: 2****Duration - 6 Months**

Overview- The objective of the training program is to prepare young tissue culturist to work on important problems in plant tissue culture. This involves not only collaborations, but also exchange of ideas among the larger group of trainees and training faculty in the fields of Biotechnology. These interactions range from informal conversations in the laboratory and shared equipment facilities, but also in organized seminars, joint group meetings, journal clubs and graduate classes.

Eligibility: Higher secondary /U.G. /P.G. in Science

Goal

Our goal is to produce intellectually critical and skilled technologists with the skills necessary for a productive career in the Biotechnology. Through this experience, the trainee becomes skilled at posing questions about fundamental biological processes and designing experiments to answer those questions. The training is augmented by formal courses offered by the Biology by seminar programs that highlight current research in Plant tissue culture and related disciplines, by the close involvement of a Thesis Advisory Committee, and by research seminar and journal club presentations by trainees.

Fee – 15,000/- per student

Student intake – 20

Course Details-**UNIT I**

Instrumentation in Plant tissue culture

Credit hours: 6

UNIT II

Preparation of Stock solution, Preparation of media, Preparation of Hormone stock solution

Credit hours: 6

UNIT III

Sterilization techniques

Credit hours: 6

UNIT IV

Callus culture, Embryo culture, Anther culture, Meristem culture, Root culture

Credit hours: 6

UNIT V

Synthetic seed, Somatic embryogenesis

Credit hours: 6