

Mohanlal Sukhadia University

Udaipur

Department of Biotechnology



Syllabus and Scheme of Examination

For

B.Sc. CBCS Programme with Biotechnology

Discipline Specific Electives Theory

S.NO.	Type of course	Semester	Course code	Title of the Course
1.	DSE 1	V	B5ET01BOT01	Botany-I
2.	DSE 2	V	B5ET02BT01	Biotechnology- I
3.	DSE 3	V	B5ET03CHE01	Chemistry- I
4.	DSE 4	VI	B6ET04BOT02	Botany-II
5.	DSE 5	VI	B6ET05BT02	Biotechnology- II
6.	DSE 6	VI	B6ET06CHE02	Chemistry- II

Discipline Specific Electives Practical

S.NO.	Type of course	Semester	Course code	Title of the Course
1.	DSE 1	V	B5EP01BOT01	Botany-I
2.	DSE 2	V	B5EP02BT01	Biotechnology- I
3.	DSE 3	V	B5EP03CHE01	Chemistry- I
4.	DSE 4	VI	B6EP04BOT02	Botany-II
5.	DSE 5	VI	B6EP05BT02	Biotechnology- II
6.	DSE 6	VI	B6EP06CHE02	Chemistry- II

Skill Enhancement Courses (Any four)

Botany	Biotechnology	Chemistry
1. Biofertilizers	1. Probiotic Technology	1. IT Skills for Chemists
2. Herbal Technology	2. Animal Cell Sciences	2. Basic Analytical Chemistry
3. Nursery and Gardening	3. Microbiological Analysis of Air and Water	3. Chemical Technology & Society
4. Floriculture	4. Techniques in Biotechnology	4. Chemoinformatics
5. Medicinal Botany	5. Techniques in Plant Tissue Culture	5. Business Skills for Chemists
6. Plant Diversity and Human Welfare		6. Intellectual Property Rights
7. Ethnobotany		7. Analytical Clinical Biochemistry
8. Mushroom Culture Technology		8. Green Methods in Chemistry
		9. Pharmaceutical Chemistry
		10. Chemistry of Cosmetics & Perfumes
		11. Pesticide Chemistry
		12. Fuel Chemistry

Skill Enhancement Courses

BIOTECHNOLOGY

1: Probiotic Technology

TOTAL HOURS: 30

CREDITS: 2

Unit-I

Credit hours: 5

Enumeration of probiotic bacteria, Isolation: Pour plate technique. Streaking four way, Zig Zag, and linear. Spreading, Slant, Stab culture.

Unit-II

Credit

hours: 5

Morphological and cultural Characterization: Colony characteristics, Simple staining, Gram's staining, Negative staining.

Unit-III

Credit

hours: 10

Biochemical characterization: Catalase test, Growth in litmus milk, Growth on BCP-MRS agar, nitrate reduction, arginine hydrolysis, Esculin hydrolysis. Voges Proskauer's test.

Unit-IV

Credit

hours: 5

Carbohydrate fermentation: Arabinose, Cellobinose, Galactose, Maltose, Mannose, Mannitol, Raffinose, Rahmanose. PCR based identification.

Unit V

Credit

hours: 5

Screening of probiotic properties: Antibiotic resistance, Bile tolerance, BSH activity, Antibacterial activity, preparation of skim milk and viability testing.

Skill Enhancement Course

2: Animal Cell Sciences

TOTAL HOURS: 30

CREDITS: 2

Unit I **Credit**

hours: 4

Microtomy: Principles & types, sample preparation & sectioning parameters.

Unit II **Credit**

hours: 6

Immunological Techniques:- antigen- antibody reactions, Radial Immuno diffusion, ELISA.

Unit III **Credit**

hours: 6

Animal Tissue culture : Design, Layout and Equipment . Media: preparation and metaphase chromosome preparation .

Unit IV **Credit**

hours: 4

Histochemical techniques : principle and types , various enzymatic anlysisand cryosectioning.

Unit V **Credit**

hours: 10

Marketing & management of animal biotechnology : Effective advertising and marketing, technology decision making, and resource decision-making etc., Product marketing decision.