

Mohanlal Sukhadia University

Udaipur

Department of Biotechnology



Syllabus and Scheme of Examination

For

M.Sc. CBCS Programme Biotechnology

M. Sc. Biotechnology (CBCS)

Total Seats: 30

(Seats with normal fees: 8, Self Finance Seats: 22)

*** Eligibility:** B. Sc. with a minimum of 50% marks**. Candidates from outside the state of Rajasthan should possess a minimum of 60% marks to seek admission. A candidate should have studied any two of the following subjects for at least two years at the under graduate level: Botany, Zoology, Chemistry, Microbiology, Biochemistry and Biotechnology. Candidates with B.Sc. in Biotechnology, Genetics, Microbiology, Biochemistry, Biomedical Science, Biomedical Technology, Genetic engineering, Genetics, Agriculture, Life Sciences, Biosciences, Food Science, Food Technology, Forensic Science, B. Pharma and other relevant subjects are also eligible for admission.

Department of Biotechnology
Mohanlal Sukhadia University
Syllabus of M.Sc. Biotechnology CBCS Scheme

Type of course	Course code	Title of the Course	L-T-P/Week	No. of credits	University exam	Internal assessment	Total
Semester I							
Core course 1	M1BT01CT01	Instrumentation and Analytical Techniques	3-1-0	4	80	20	100
Core course 2	M1BT02CT02	Cell Biology and Molecular Genetics	3-1-0	4	80	20	100
Core course 3	M1BT03CT03	Fundamentals of Microbiology	3-1-0	4	80	20	100
Core course 4	M1BT04CT04	Biomolecules and Metabolism	3-1-0	4	80	20	100
Core course practical 1	M1BT05CP01	Instrumentation and Analytical Techniques + Cell Biology and Molecular Genetics	0-0-8	4	80	20	100
Core course practical 2	M1BT06CP02	Fundamentals of Microbiology + Biomolecules and Metabolism	0-0-8	4	80	20	100
Skill course 1	M2BT07SEC01	Any one from the given list	1-0-2	2	80	20	100
				26	560	140	700
Semester II							
Core course 5	M2BT01CT05	Molecular Biology	3-1-0	4	80	20	100
Core course 6	M2BT02CT06	Immunology and Enzymology	3-1-0	4	80	20	100
Core course 7	M2BT03CT07	Bioinformatics and Biostatistics	3-1-0	4	80	20	100
Core course 8	M2BT04CT08	Genetic Engineering	3-1-0	4	80	20	100
Core course practical 3	M2BT05CP03	Molecular Biology + Immunology and Enzymology	0-0-8	4	80	20	100
Core course practical 4	M2BT06CP04	Bioinformatics and Biostatistics + Genetic Engineering	0-0-8	4	80	20	100
				24	480	120	600
Semester III							
Core course 9	M3BT01CT09	Environmental Biotechnology	3-1-0	4	80	20	100
Core course 10	M3BT02CT10	Animal Biotechnology	3-1-0	4	80	20	100
Core course 11	M3BT03CT11	Plant Biotechnology	3-1-0	4	80	20	100
Core course 12	M3BT04CT12	Fermentation Technology	3-1-0	4	80	20	100
Core course practical 5	M3BT05CP05	Environmental Biotechnology + Animal Biotechnology	0-0-8	4	80	20	100
Core course practical 6	M3BT06CP06	Plant Biotechnology + Fermentation Technology	0-0-8	4	80	20	100
Skill course 2	M3BT07SEC02	Any one from the given list	1-0-2	2	80	20	100
				26	560	140	700

Semester IV : Choice of A or B							
A.	Industrial Training	Major Research Project (at research laboratory or institute of repute (5 months)	0-0-8	24	480*	120	600
B.	DSE						
Discipline Specific Elective 1	M4BT01ET01	Minor Research Project	3-1-0	4	80	20	100
Discipline Specific Elective 2	M4BT02ET02 (a/b)	Choose any one from the given list	3-1-0	4	80	20	100
Discipline Specific Elective 3	M4BT03ET03 (a/b)	Choose any one from the given list	3-1-0	4	80	20	100
Discipline Specific Elective 4	M4BT04ET04 (a/b)	Choose any one from the given list	3-1-0	4	80	20	100
Discipline Specific Elective practical	M4BT05EP01	Practical 1 DSE	0-0-8	4	80	20	100
Discipline Specific Elective practical	M4BT06EP02	Practical 2 DSE	0-0-8	4	80	20	100
				24	480	120	600
GRAND TOTAL				100	2080	520	2600

*480 : (Project dissertation 200 + Presentation 150 + Viva- Voce100, Scientific paper: 30)

SYLLABUS
for
M. Sc. Biotechnology
Structure of M. Sc. Biotechnology under CBCS Scheme

Core Course
Semester I

CC1(M1BT01CT01): Instrumentation and Analytical Techniques
CC2(M1BT02CT02): Cell Biology and Molecular Genetics
CC3(M1BT03CT03): Fundamentals of Microbiology
CC4(M1BT04CT04): Biomolecules and Metabolism
(Practical) CC1,2 (M1BT05CP01): Instrumentation and Analytical Techniques + Cell Biology and Molecular Genetics
(Practical) CC3,4 (M1BT06CT02): Fundamentals of Microbiology + Biomolecules and Metabolism
SEC1(M2BT07SEC01): Techniques of Molecular Biology

Semester II

CC5 (M2BT01CT05): Molecular Biology
CC6 (M2BT02CT06): Immunology and Enzymology
CC7 (M2BT03CT07): Bioinformatics and Biostatistics
CC8(M2BT04CT08): Genetic Engineering
(Practical) CC5, 6 (M2BT05CP03): Molecular Biology + Immunology and Enzymology
(Practical) CC7, 8 (M2BT06CP04): Bioinformatics and Biostatistics + Genetic Engineering

Semester III

CC9 (M3BT01CT09): Environmental Biotechnology
CC10 (M3BT02CT10): Animal Biotechnology
CC11(M3BT03CT11): Plant Biotechnology
CC12 (M3BT04CT12): Fermentation Technology
(Practical) CC9,10 (M3BT05CP05): Environmental Biotechnology + Animal Biotechnology
(Practical) CC11, 12 (M3BT06CP06): Plant Biotechnology + Fermentation Technology
SEC2 (M3BT07SEC02): Techniques of Plant Biotechnology

Semester IV : Choice of A or B

A : Industrial Training : Major Research Based Project including Practical work at research laboratory or institute of repute other than parent university (5 Months)

B : Discipline Specific Electives

DSE1(M4BT01ET01): Minor Research Project (Compulsory for all students)

(Any 3 out of the given list)

DSE 2 (M4BT02ET02) (a/b):
a. Agriculture Biotechnology
b. Biosafety, Bioethics and IPR

DSE3(M4BT03ET03)(a/b):
a. Food and Dairy Biotechnology
b. Advanced Biotechnology

DSE4(M4BT04ET04)(a/b):
a. Medical and Pharmaceutical Biotechnology
b. Host- Parasite Interactions