

UNDERGRADUATE PROGRAM

B.Sc. Biotechnology



योग: कर्मसु कौशलम्

INDRASHIL UNIVERSITY

Department of Biosciences | School of Science

B.Sc. Biotechnology (2026-2027)

Undergraduate Program (4 Years | 8 Semesters)

Course Structure for B.Sc. Biotechnology

Semester I					
Sr. No.	Course Code	Course Category	Course Title	L-T-P	Credits
1	BIO1 MT 101	MSD	Fundamental Biochemistry	3-0-0	3
2	BIO1 MT 102	MSD	Cell Biology	3-0-0	3
3	BIO1 MT 103	Minor	Analytical techniques in biological science	3-0-0	3
4	MDC T 104	Multidisciplinary	Biodiversity	3-0-0	3
5	BIO1 MP 105	MSD	Laboratory 1: Fundamental Biochemistry, Cell Biology and	0-0-4	2
6	BIO1 MP 106	Minor	Laboratory 2: Analytical techniques in biological science	0-0-2	1
7	BIO1 MP 107	Multidisciplinary	Laboratory 3: Biodiversity	0-0-2	1
8	AEC 1 108	AEC	English Language-1	2-0-0	2
9	SEC 1 109	SEC	Computer technology and IT skill	2-0-0	2
10	IKS 1 110	IKS	Traditional Yoga and its Modernization for Health benefits	2-0-0	2
			Total credits	18-0-8	22

MDS- Major Discipline specific, AEC- Ability Enhancement Course, SEC - Skills Enhancement Course, IKS – Indian Knowledge System

Semester II					
Sr. No.	Course Code	Course Category	Course Title	L- T- P	Total Credits
1	BIO1MT 201	MSD	Animal Physiology	3-0-0	3
2	BIO1MT 202	MSD	Plant Physiology	3-0-0	3
3	BIO1MT 203	Minor	Basic tools in Biotechnology	3-0-0	3
4	MDC1 T 204	Multidisciplinary	Fundamental Physics	3-0-0	3
5	BIO1MP 205	Major	Laboratory-4 Animal Physiology and Plant Physiology	0-0-4	2
6	BIOMP 206	Minor	Laboratory 5: Basic tools in Biotechnology	0-0-2	1
7	MDC1P 207	Multidisciplinary	Laboratory-6 Fundamental Physics	0-0-2	1
8	AEC1 208	AEC	English Language-2	2-0-0	2
9	SEC1 209	SEC	Techniques in organic cultivation	2-0-0	2
10	VAC1 210	VAC	Forest and wildlife conservation	2-0-0	2
			Total Credits	18-0-8	22

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Semester III					
Sr. No.	Course Code	Course Category	Course Title	L- T- P	Total Credits
1	BIO2 MT 301	MDS	Genetics	3-0-0	3
2	BIO2 MT 302	MDS	General Microbiology	3-0-0	3
3	BIO2 MT 303	MDS	Enzymology	3-0-0	3
4	MDC-2 T 304	MDC	Biotechnology and human welfare	3-0-0	3
5	BIO2 MP 305	MDS	Laboratory-7 Genetics, General Microbiology and Enzymology	0-0-6	3
6	BIO2 MP 306	MDS	Laboratory-8 Biotechnology and human welfare	0-0-2	1
7	AEC-2 307	AEC	Environment Studies & Disaster Management	2-0-0	2
8	SEC-2 308	SEC	Basics of forensic sciences	2-0-0	2
9	IKS-2 309	IKS	Bharatiya Swasthya Sampada	2-0-0	2
			Total Credits	14-0-8	22

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Semester IV					
Sr. No.	Course Code	Course Category	Course Title	L- T- P	Total Credits
1	BIO2 MT 401	MDS	Molecular biology	3-0-0	3
2	BIO2 MT 402	MDS	Immunology	3-0-0	3
3	BIO2 MT 403	MDS	Microbial physiology	3-0-0	3
4	BIO2 MT 404	Minor	Parasitology	3-0-0	3
5	BIO2 MP 405	MDS	Laboratory-9 Molecular biology; Immunology and Microbial physiology	0-0-6	3
6	BIO2 MP 406	Minor	Laboratory-10 Parasitology	0-0-2	1
7	AEC2 407	AEC	Personality Development	2-0-0	2
8	SEC2 408	SEC	Fermentation Technology	2-0-0	2
9	VAC2 409	VAC	Effective Waste Management	2-0-0	2
			Total Credits	18-0-8	22

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- Value Added Course

Semester V					
Sr. No.	Course Code	Course Category	Course Title	L- T- P	Total Credits
1	BIO3 MT 501	MDS	Industrial Biotechnology	3-0-0	3
2	BIO 3 MT 502	MDS	Plant Biotechnology	3-0-0	3
3	BIO3 MT 503	MDS	Marine biotechnology	3-0-0	3
4	BIO 3 MT 504	Minor	Assisted Reproductive Technology	3-0-0	3
5	BIO 3 MT 505	Minor	Bioinformatics and biostatistics	3-0-0	3
6	BIO3 MP 506	MDS	Laboratory 11: Industrial Biotechnology, Plant biotechnology and Marine biotechnology	0-0-6	3
7	BIO3 MP 507	Minor	Laboratory 12: Assisted Reproductive Technology and Bioinformatics and Biostatistics	0-0-4	2
8	SEC 3 508	SEC	Environmental Impact Assessment	2-0-0	2
			Total Credits	17-0-10	22

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Semester VI					
Sr. No.	Course Code	Course Category	Course Title	L- T- P	Total Credits
1	BIO 3 MT 601	MDS	Animal Biotechnology	3-0-0	3
2	BIO 3 MT 602	MDS	Recombinant DNA Technology	3-0-0	3
3	BIO 3 MT 603	MDS	Food and Dairy Biotechnology	3-0-0	3
4	BIO 3 MT 604	Minor	Molecular Diagnostics	3-0-0	3
5	BIO 3 MP 605	MDS	Laboratory 13: Animal Biotechnology, Recombinant DNA Technology and Food and Dairy Biotechnology	0-0-6	3
6	BIO 3 MP 606	Minor	Laboratory 14: Molecular Diagnostics	0-0-2	1
7	AEC 3 607	AEC	Technical writing	2-0-0	2
8	SEC 3 608	SEC	Internship	0-0-8	4
			Total Credits	14-0-16	22

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Semester VII					
Sr. No.	Course Code	Course Category	Course Title	L- T- P	Total Credits
1	BIO 4 MT 701	Major	Medical Biotechnology	3-1-0	4
2	BIO 4 MT 702	Major	Genomics and Proteomics	3-1-0	4
3	BIO 4 MT 703	Minor	Bio-Entrepreneurship in Biotechnology	3-1-0	4
4	BIO 4 MP 704	Major	Laboratory 15- Laboratory for MBT and GP	0-0-8	4
5	OJT/RP 4 705	OJT/RP	Internship	0-0-9	6
	OR in place of OJT				
6	BIO 4 MT 706	Major	Herbal technology	3-1-0	4
7	BIO 4 MP 707	Major	Laboratory 16- Laboratory for HT	0-0-2	2
			Total Credits	9-2-17	22

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Semester VIII					
Sr. No.	Course Code	Course Category	Course Title	L- T- P	Total Credits
1	BIO 4 MT 801	Major	Pharmaceutical Biotechnology	3-1-0	4
2	BIO 4 MT 802	Major	Environmental Biotechnology	3-1-0	4
3	BIO 4 MT 803	Minor	Bioethics and Bio-safety	3-1-0	4
4	BIO 4 MP 804	Major	Laboratory 17- Laboratory for PB and EBT	0-0-8	4
5	OJT/RP 4 805	OJT/RP	Internship	0-0-6	6
	OR in place of OJT				
6	BIO 4 MT 806	Major	Good Laboratory Practice, QC and QA	3-1-0	4
7	BIO 4 MP 807	Major	Laboratory 18- Laboratory for Good Laboratory Practice, QC and QA	0-0-4	2
			Total Credits	9-2-12	22

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