



TECHNO INDIA UNIVERSITY

W E S T B E N G A L

**COURSE CURRICULUM FOR 4-YEARS B.TECH
BIOTECHNOLOGY**



DEPARTMENT OF BIOTECHNOLOGY

Techno India University, West Bengal

EM-4, EM Block, Sector V, Bidhannagar,

Kolkata -700091, West Bengal

**First Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
Theory						
1	TIU-BS-UMA-T11102	Introduction Engineering Mathematics	3	1	0	4
2	TIU-BS-UCH-T11101	Chemistry	3	1	0	4
3	TIU-ES-UCS-T11101	Introduction to Programming	3	0	0	3
Practical						
1	TIU-BS-UCH-L11101	Chemistry Laboratory	0	0	3	1.5
2	TIU-ES-UCS-L11101	Introduction to Programming Laboratory	0	0	3	1.5
3	TIU-ES-UCS-L11191	Basic computing lab	0	0	2	1
4	TIU-ES-UME-L11192	Workshop Practice	0	0	3	1.5
Sessional						
1	TIU-HSM-UES-S11191	Entrepreneurship Skill Development	0	0	2	1
2	TIU-HSM-UEN-S11191	Career Advancement & Skill Development-I Communication Skill	2	0	0	2
Total Credits						19.5

**Second Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
Theory						
1	TIU-BS-UMA-T12103	Numerical and Statistical Methods	3	1	0	4
2	TIU-BS-UPH-T12101	Physics	3	1	0	4
3	TIU-ES-UME-T12101	Engineering Mechanics	3	0	0	3
4	TIU-ES-UCS-T12101	Problem-solving using Data Structures	3	0	0	3
5	TIU-ES-UEE-T12101	Basic Electrical and Electronics Engineering	3	1	0	4
Practical						
1	TIU-ES-UEE-L12101	Basic Electrical and Electronics Engineering Lab and Simulation	0	0	3	1.5
2	TIU-ES-UCS-L12101	Problem-Solving using Data Structures Lab	0	0	3	1.5
3	TIU-ES-UME-L12191	Engineering Drawing and Graphics	0	0	3	1.5
4	TIU-BS-UPH-L12101	Physics lab	0	0	3	1.5
Sessional						
1	TIU-HSM-UES-S11191	Entrepreneurship Skill Development	0	0	2	1
2	TIU-HSM-UEN-S11191	Career Advancement & Skill Development-I Communication Skill	2	0	0	2
Total Credits						27

**Third Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
Theory						
1	TIU-BS-UBT-T21101	Microbiology	3	0	0	3
2	TIU-BS-UBT-T21102	Biochemistry	3	0	0	3
3	TIU-PC-UBT-T21101	Environmental Biotechnology	3	0	0	3
4	TIU-BS-UBT-T21103	Cell Biology	3	0	0	3
5	TIU-BS-UBT-T21104	Molecular Biology	3	0	0	3
Practical						
1	TIU-BS-UBT-L21101	Microbiology Laboratory	0	0	3	1.5
2	TIU-BS-UBT-L21102	Biochemistry Laboratory	0	0	3	1.5
Sessional						
1	TIU-HSM-UES-S11191	Entrepreneurship Skill Development	0	0	2	1
2	TIU-HSM-UEN-S11191	Career Advancement & Skill Development-I Communication Skill	2	0	0	2
3	TIU-ES-UBT-S21191	Technical Seminar	0	0	2	1
Total Credits						22

**Fourth Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
Theory						
1	TIU-PC-UBT-T22101	Genetic Engineering	3	0	0	3
2	TIU-PC-UBT-T22102	Immuno technology	3	0	0	3
3	TIU-PC-UBT-T22103	Good manufacturing and Laboratory practice	3	0	0	3
4	TIU-PC-UBT-T22104	Bioprocess Engineering	3	0	0	3
5	TIU-PE-UBT-E22101A	Nanotechnology and Biomaterial Science	3	0	0	3
Practical						
1	TIU-PC-UBT-L22101	Genetic Engineering Laboratory	0	0	3	1.5
2	TIU-PC-UBT-L22102	Immuno-technology Laboratory	0	0	3	1.5
Sessional						
1	TIU-CASD-UBT-S22182	R-Programming	1	0	2	2
2	TIU-HSM-UES-S22192	Entrepreneurship Skill Development	0	0	1	1
Total Credits						21

**Fifth Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
Theory						
1	TIU-UBT-T313	Metabolic Engineering	3	0	0	3
2	TIU-UBT-T305	Industrial Biotechnology	3	0	0	3
3	TIU-UBT-T309	Genetics and Biostatistics	2	0	2	3
4	TIU-UBT-T311	Animal Biotechnology	3	0	0	3
5	TIU-UBT-T307	Bioseparation Technology and Down stream Processing	3	0	0	3
Practical						
1	TIU-UBT-L315	Enzymology Laboratory	0	0	3	1.5
2	TIU-UBT-L317	Bioseparation Technology Laboratory	0	0	3	1.5
Sessional						
1	TIU-UES-S381	Entrepreneurship Skill Development	0	0	2	1
2	TIU-UBT-S301	Bio-Computing I	2	0	2	3
3	TIU-UBT-S305	Training/Internship	0	0	4	2
Total Credits						24

**Sixth Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
Theory						
1	TIU-UBT-T314	Plant Biotechnology	3	0	0	3
2	TIU-UBT-T318	Regulation of gene expression	3	0	0	3
3	TIU-UBT-T324	Food and Pharmaceutical Biotechnology	3	0	0	3
4	TIU-UBT-T326	Molecular Diagnostics	3	0	0	3
Practical						
1	TIU-UBT-L328	Bioanalytical Techniques Laboratory	0	0	3	1.5
2	TIU-UBT-L316	Plant Biology Laboratory	0	0	3	1.5
Sessional						
1	TIU-UES-S382	Entrepreneurship Skill Development	0	0	2	1
2	TIU-CASD-UBT-S302	Bio-Computing II	1	0	2	2
Total Credits						21

**Seven Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
1	TIU-CASD-UBT-S497	Career Advancement & Skill Development (Gene Expression and Transgenics)	3	0	0	3
2	TIU-UBT-T407	Biosafety, Bioethics, and IPR	3	0	0	3
3	TIU-UBT-T417	Methods in Biology	3	0	0	3
4	TIU-UBT-P491	Project-I	0	0	8	4
5	TIU-UBT-S403	Training/Internship	0	0	6	3
6	TIU-UES-S481	Entrepreneurship Skill Development	1	0	0	1
Total Credits						18

**Eight Semester**

Sl. No.	Course Code	Course Title	Contact Hrs. / Week			Credit
			L	T	P	
1	TIU-UBT-P492	Project Work-II	0	0	16	8
2	TIU-CASD-UBT-S498	Career Advancement & Skill Development (IoT and Biotechnology)	3	0	0	3
3	TIU-UES-S498	Entrepreneurship Skill Development	2	0	0	2
4	TIU-UBT-G402	Comprehensive <i>viva-voce</i>	0	0	2	1
Total Credits						14