

CURRICULUM STRUCTURE

M.TECH. BIOTECHNOLOGY										
CURRICULUM										
SEMESTER – I										
SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	I	ES	TH	EMA52001	Applied Engineering Mathematics	3	1	0	4	4
2	I	PC	TP	EBT52001	Advanced Genetic Engineering	3	0	2	4	5
3	I	PC	TP	EBT52002	Applied Immunotechnology	3	0	2	4	5
4	I	DE	TP	EBT525xx	Department Elective– 1	2	0	2	3	4
5	1	DE	TP	EBT525xx	Department Elective– 2	2	0	2	3	4
6	I	EEC	PR	ELS52400	Technical Writing and Presentation Skills	0	2	2	2	4
Total						13	3	10	20	26
L – Lecture T – Tutorial P – Practical C – Credit TCH – Total Contact Hours										

SEMESTER – II										
SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	II	PC	TP	EBT52003	AI in Drug Design and Development	3	0	2	4	5
2	II	PC	TP	EBT52004	Bioprocess Reactor Design and Development	3	0	2	4	5
3	II	PC	TP	EBT52005	Advanced Tissue Engineering	3	0	2	4	5
4	II	DE	TP	EBT525xx	Department Elective– 3	2	0	2	3	4
5	II	DE	TP	EBT525xx	Department Elective– 4	2	0	2	3	4
6	II	EEC	PR	ELS52401	Leadership Skills for Engineers	0	2	2	2	4
Total						13	2	12	20	27
L – Lecture T – Tutorial P – Practical C – Credit TCH – Total Contact Hours										

SEMESTER – III										
SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	III	EEC	IN	EBT52800	Internship**	0	0	0	2	0
2	III	EEC	PJ	EBT52801	Project Work-Phase – I	0	0	32	16	32
					Total	0	0	32	18	32
L – Lecture T – Tutorial P – Practical C – Credit TCH – Total Contact Hours										

Note: **summer vacation after semester II, Internship is mandatory and will be assessed in Semester III

SEMESTER – IV										
SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	IV	EEC	PJ	EBT52802	Project Work-Phase - II*	0	0	44	22	44
					Total	0	0	44	22	44
L – Lecture T – Tutorial P – Practical C – Credit TCH – Total Contact Hours										

*** Presentation in indexed conf./ acceptance for publication in journal / patent filing or publishing is mandatory during the course of study**

TOTAL CREDITS: (20+20+18+22) = 80 CREDITS

LIST OF DEPARTMENT ELECTIVES FOR BIOTECHNOLOGY

DEPARTMENT ELECTIVE – 1

SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	I	DE	TP	EBT52500	Applied Pharmacokinetics for Biotechnologists ^a	2	0	2	3	4
2	I	DE	TP	EBT52501	Biosimilars and Biologics ^a	2	0	2	3	4
3	I	DE	TP	EBT52502	Molecular Medicine ^b	2	0	2	3	4
4	I	DE	TP	EBT52503	Nanobiotechnology ^{a&b}	2	0	2	3	4

DEPARTMENT ELECTIVE – 2

SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	II	DE	TP	EBT52504	Biomolecular Spectroscopy ^{a&b}	2	0	2	3	4
2	II	DE	TP	EBT52505	Plant Molecular Biology ^a	2	0	2	3	4
3	II	DE	TP	EBT52506	Cancer Genetics and Metabolism ^{a&b}	2	0	2	3	4
4	II	DE	TP	EBT52507	Data analysis for Biologists ^{a&b}	2	0	2	3	4

DEPARTMENT ELECTIVE – 3

SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	II	DE	TP	EBT52508	Advanced Molecular Pathogenesis ^{a&b}	2	0	2	3	4
2	II	DE	TP	EBT52509	Applied Genomics and Proteomics ^{a&b}	2	0	2	3	4
3	II	DE	TP	EBT52510	Biofuels and Biorefineries ^a	2	0	2	3	4
4	II	DE	TP	EBT52511	Advanced Medical Biotechnology ^b	2	0	2	3	4

DEPARTMENT ELECTIVE – 4

SL. NO	SEM	COURSE CATEGORY	COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	C	TCH
1	II	DE	TP	EBT52512	Marine Biotechnology ^a	2	0	2	3	4

2	II	DE	TP	EBT52513	Downstream processing in Biotechnology ^a	2	0	2	3	4
3	II	DE	TP	EBT52514	Bioprospecting and Biopiracy ^a	2	0	2	3	4
4	II	DE	TP	EBT52515	Molecular Diagnostics ^{a&b}	2	0	2	3	4

Note:

a - Applied Pharmacology

b - Clinical studies

Category Code	Category	Breakup Of Credits
ES	Engineering Science Course	4
PC	Programme Core Courses	20
DE	Department Elective Course	12
EEC	Employment Enhancement Course	44
	Total	80

COURSE TYPE	
TP	Theory with Practical Course
TH	Theory Course
PR	Practical Course
PJ	Project Phase
IN	Internship

Credits Distribution Under Each Category

Sl. No.	Category Courses	No. of Courses	Credits	Credits in Percentage	Total
1	CORE COURSES	Professional Core (TH / TP)	5	20	25 %
2		Department Elective (DE)	4	12	15 %
					40 %

3	ALLIED COURSES	Engineering Science (ES)	1	4	5 %	5 %
5	EMPLOYMENT ENHANCEMENT COURSES	Technical Writing and Presentation Skills	1	2	2.5 %	55 %
		Leadership Skills for Engineers	1	2	2.5%	
		Internship	1	2	2.5 %	
		Project Work (Phase 1 & 2)	2	38	47.5 %	
		TOTAL	20	80	100 %	100 %