

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
II YEAR: III SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	THEORY		PRACTICAL		C
						CIE	ESE	CIE	ESE	
1	BCS3701	Basic Data Structure and Database Management	3	0	2	40	60	80	20	4
2	BHU3018	Organizational Psychology	2	0	0	40	60	0	0	2
3	BBT3701	Cell Biology	3	0	2	40	60	80	20	4
4	BBT3702	Biochemistry	3	0	2	40	60	80	20	4
5	BBT3703	Microbiology	3	0	2	40	60	80	20	4
6	BBT3019	Genetics	3	0	0	40	60	0	0	3
		MOOCs (Essential for Hons. Degree)								
		Total	17	0	08	240	360	320	80	21

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C - Credit

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
II YEAR: IV SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	THEORY		PRACTICAL		C
						CIE	ESE	CIE	ESE	
1	BMA4013	Biostatistics	3	0	0	40	60	0	0	4
2	BHU4019/BHU4018	Organizational Sociology/Organizational Psychology	2	0	0	40	60	0	0	2
3	BBT4701	Bioprocess Engineering	3	0	2	40	60	80	20	4
4	BBT4702	Molecular Biology	3	0	2	40	60	80	20	4
5	BBT4703	Modern Analytical Techniques in Biotechnology	3	0	2	40	60	80	20	4
6	BBT4015	Bioenergetics and Metabolic Pathways	3	0	0	40	60	0	0	3
7	BBT4511	Seminar-I	0	0	1	0	0	100	0	1
8	BSS4001	Soft Skills and Interpersonal Communication	2	0	0	100	0	0	0	2
9	XCSX604	Cyber Security	2	0	0	Satisfactory/Unsatisfactory				0
		MOOCs (Essential for Hons. Degree)								
TOTAL			21	01	07	340	360	340	60	24

L - Lecture
T - Tutorial
P - Practical
CIE - Continuous Internal Evaluation
ESE-End Semester Exam
C – Credit

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
III YEAR: V SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	THEORY		PRACTICAL		C
						CIE	ESE	CIE	ESE	
1	BMG5007	Principles of Management	3	0	0	40	60	0	0	3
2	BBT5701	Genetic Engineering	3	0	2	40	60	80	20	4
3	BBT5702	Enzyme Technology	3	0	2	40	60	80	20	4
4	BBT5703	Bioinformatics	3	0	2	40	60	80	20	4
5		Departmental Elective-1	3	0	0	40	60	0	0	3
6		Departmental Elective-II	3	0	0	40	60	0	0	3
7	BAP5501	Aptitude and Reasoning and Online Test	0	0	2	0	0	100	0	0
8	XLAX601/ XHUX602	Constitution of India/ Essence of India Traditional Knowledge	2	0	0	Satisfactory/Unsatisfactory				0
9	BBT5519	Mini Project or Internship Assessment*	0	0	2	0	0	100	0	1
		MOOCs (Essential for Hons. Degree)								
		TOTAL	20	0	10	240	360	440	60	22
The Mini Project or Internship Assessment*(4-6 week) conducted during summer break after IV semester will be assessed during V semester.										

* - Mandatory Non-Credit Course

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C - Credit

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
III YEAR: VI SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	THEORY		PRACTICAL		C
						CIE	ESE	CIE	ESE	
1	BBT6701	Immunology	3	0	2	40	60	80	20	4
2	BBT6702	Plant Biotechnology	3	0	2	40	60	80	20	4
3	BBT6703	Down Stream Processing	3	0	2	40	60	80	20	4
4	BBT6019	Heat and Mass Transfer for Biological System	3	0	0	40	60	0	0	3
5	-	Departmental Elective-III	3	0	0	40	60	0	0	3
6	-	Departmental Elective-IV	3	0	0	40	60	0	0	3
7	BBT6518	Seminar-II	0	0	1	0	0	100	0	1
8	BAP6501	Aptitude and Reasoning and Online Test	0	0	2	0	0	100	0	0
9	XHUX602/ XLAX601	Essence of Indian Traditional Knowledge/ Constitution of India	2	0	0	Satisfactory/Unsatisfactory				0
		MOOCs (Essential for Hons. Degree)								
TOTAL			20	0	09	240	360	440	60	22

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C - Credit

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
IV YEAR: VII SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	THEORY		PRACTICAL		C
						CIE	ESE	CIE	ESE	
1	-	Departmental Elective-V	3	0	0	40	60	0	0	3
2	-	Departmental Elective-VI	3	0	0	40	60	0	0	3
3	BBT7001	Genomics and Proteomics	3	0	0	40	60	0	0	3
4	BBT7701	Animal Biotechnology	3	0	2	40	60	80	20	4
5	BBT7009	IPR, Bioethics and Bio-safety	3	0	0	40	60	0	0	3
6	BBT7510	Mini Project or Internship Assessment*	0	0	2	0	0	100	0	1
7	MBT7503	Research Project Phase-I	0	0	2	0	0	80	20	1
8	MHU7001	Technical Communication	2	0	0	40	60	0	0	2
		MOOCs (Essential for Hons. Degree)								
		Total	17	0	6	240	360	260	40	20

* - Mandatory Non-Credit Course

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C - Credit

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
IV YEAR: VIII SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
Theory									
1	MBT8001	Recombinant DNA Technology	4	0	-	40	60	100	4
2	MBT8002	Molecular Biology and Virology	4	0	-	40	60	100	4
3	MBT8003	Bioprocess Engineering & Technology	4	0	-	40	60	100	4
4		Elective-I	3	0	-	40	60	100	3
5		Elective-II	3	0	-	40	60	100	3
PRACTICAL/TRAINING / PROJECT									
6	MBT8501	Recombinant DNA Technology Lab	-	-	2	80	20	100	1
7	MBT8502	Molecular Biology and Virology Lab	-	-	2	80	20	100	1
8	MBT8507	Bioprocess Engineering & Technology Lab	-	-	2	80	20	100	1
9	MBT8508	Seminar-III	-	-	1	100	0	100	1
10	MBT8504	Research Project Phase-II	-	-	4	100	0	100	2
11	MBT8505	Comprehensive Viva Voce	0	0	0	80	20	100	1
		Total	80	0	11	720	360	1100	25

L - Lecture
T - Tutorial
P - Practical
CIE - Continuous Internal Evaluation
ESE-End Semester Exam
C - Credit

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
V YEAR: IX SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
Theory									
1	MBT9001	Industrial and Pharmaceutical Biotechnology	4	0	-	40	60	100	4
2	MBT9002	Enzyme Engineering and Technology	4	0	-	40	60	100	4
3	MBT9003	Ethical Issues in Biotechnology and Engineering	3	0	-	40	60	100	3
4	MBT9004	Technical writing and Literature Survey	2	0	-	40	60	100	2
5	-	Elective-III	3	0	-	40	60	100	3
PRACTICAL/ TRAINING/ PROJECT									
6	MBT9501	Research Project Phase-III	0	0	6	80	20	100	3
7	MBT9502	Biochemical Preparation Lab	0	0	4	80	20	100	2
8	MBT9504	Seminar-IV	0	0	1	100	0	100	1
		Total	16	0	11	460	340	800	22

UNIVERSITY MANDATORY NON-CREDIT COURSE									
1	XHUX601	Human Values and Ethics	2	-	-	100	-	100	0

L - Lecture
T - Tutorial
P - Practical
CIE - Continuous Internal Evaluation
ESE-End Semester Exam
C - Credit

STUDY & EVALUATION SCHEME
B.TECH+M.TECH (BIOTECH)
V YEAR: X SEMESTER

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	Total	C
PRACTICAL/TRAINING / PROJECT									
1	MBT0501	Research Project Phase-IV	-	-	32	80	20	100	16
		Total	0	0	32	80	20	100	16

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C - Credit

LIST OF DEPARTMENT ELECTIVES

S. NO.	SUBJECT CODE	SUBJECT
	DEPARTMENTAL ELECTIVE -I (SEMESTER-II)	
1	BBT5105	Industrial safety and Hazard Analysis
2	BBT5106	Molecular modeling and drug design
3	BBT5107	Drug and Pharmaceutical Biotechnology
	DEPARTMENTAL ELECTIVE -II (SEMESTER-II)	
1	BBT5201	Nano biotechnology
2	BBT5202	Principles of Food Technology
3	BBT5203	Environmental Biotechnology
	DEPARTMENTAL ELECTIVE -III (SEMESTER-VI)	
1	BBT6110	Piolet Plant and Scale up Practices
2	BBT6111	Perl Programming and Bio Perl
3	MBT3106	Biomedical Instrumentation
	DEPARTMENTAL ELECTIVE -IV (SEMESTER-VI)	
1	BBT6201	Biomaterials
2	BBT6202	Food Processing Packaging and Waste Management
3	BBT6203	Pollution control and Engineering
	DEPARTMENTAL ELECTIVE – V (SEMESTER-VII)	
1	BBT7105	Biochemical Engineering
2	BBT7106	System Biology
3	BBT7107	Cancer Biology
	DEPARTMENTAL ELECTIVE – VI (SEMESTER-VII)	
1	BBT7201	Stem Cell and Tissue Engineering
2	BBT7202	Food Quality Analysis & Assurance
3	BBT7203	Agro-biotechnology

LIST OF ELECTIVES

S. NO.	SUBJECT CODE	SUBJECT
	ELECTIVE – I(VIII SEMESTER)	
1	MBT8101	Nano-biotechnology and Nano-devices
2	MBT8102	Microbial Engineering
	ELECTIVE – II(VIII SEMESTER)	
1	MBT8201	Biocatalysts and Enzyme Reaction
2	MBT8202	Animal Cell Science and Technology
3	MBT8203	Cell and Tissue Engineering
	ELECTIVE – III(IX SEMESTER)	
1	MBT9101	Bioreactor Design and Analysis
2	MBT9102	Biochemical and Biophysical Techniques