

REVISED SCHEME OF STUDIES FOR A FOUR-YEAR B.E. DEGREE COURSE IN BIO-TECHNOLOGY

**I & II SEMESTERS SUBJECTS ARE COMMON TO ALL THE BRANCHES IN ENGINEERING
(AS PER THE CMJU REGULATIONS)**

III SEMESTER B. E. BIO-TECHNOLOGY W.E.F. SEPTEMBER 2011

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory / lab) (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory / Practical	I A	Total
1	10MAT-31	Mathematics – III	Maths	04	100	25	125
2	10BT-32	Introduction to Unit Operations	BT/ChE	04	100	25	125
3	10BT-33	Human Physiology	BT	04	100	25	125
4	10BT-34	Biochemistry	BT	04	100	25	125
5	10BT-35	Microbiology	BT	04	100	25	125
6	10BT-36	Cell Biology & Genetics	BT	04	100	25	125
7	10BTL-37	Biochemistry Lab	BT	03	50	25	75
8	10BTL-38	Unit Operations Lab	BT/ChE/ME	03	50	25	75

IV SEMESTER B. E. BIO-TECHNOLOGY

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory / lab) (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory/ Practical	I A	Total
1	10BT-41	Biostatistics and Biomodeling	BT	04	100	25	125
2	10BT-42	Biochemical Thermodynamics	BT/ChE/ME	04	100	25	125
3	10BT-43	Structural Biology	BT	04	100	25	125
4	10BT-44	Molecular Biology	BT	04	100	25	125
5	10BT-45	Basics of Computer Applications	BT/CSE/ISE/MCA	04	100	25	125
6	10BT-46	Bioprocess Principles & Calculations	BT/ChE	04	100	25	125
7	10BTL-47	Cell & Molecular Biology Lab	BT	03	50	25	75
8	10BTL-48	Microbiology Lab	BT	03	50	25	75

V SEMESTER B. E. BIO-TECHNOLOGY

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory / lab) (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory/ Practical	I A	Total
1	10BT-51	Management and Entrepreneurship	BT/MBA /ME/IEM	04	100	25	125
2	10BT-52	Biokinetics & Bioreaction Engg.	BT/ChE	04	100	25	125
3	10BT-53	Biosensors & Bioinstrumentation	BT/IT/ ML/BM	04	100	25	125
4	10BT-54	Immunotechnology	BT	04	100	25	125
5	10BT-55	Genetic Engg. & Applications	BT	04	100	25	125
6	10BT-56	Bioinformatics	BT	04	100	25	125
7	10BTL-57	Genetic Engineering and Immunotechnology Lab	BT	03	50	25	75
8	10BTL-58	Bioinformatics Lab	BT	03	50	25	75

VI SEMESTER B. E. BIO-TECHNOLOGY

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory / lab) (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory/ Practical	I A	Total
1	10BT-61	Bioprocess Control & Automation	BT/ChE	04	100	25	125
2	10BT-62	Clinical & Pharmaceutical Biotechnology	BT	04	100	25	125
3	10BT-63	Enzyme Technology & Biotransformation	BT	04	100	25	125
4	10BT-64	Genomics and Proteomics	BT	04	100	25	125
5	10BT-65	Bioprocess Equipment Design & CAED	BT/ChE/ ME	04	100	25	125
6	10BT-66	Elective – A	BT/ChE/ ME/CSE	04	100	25	125
7	10BTL-67	Bioprocess Control & Automation Lab	BT/ChE	03	50	25	75
8	10BTL-68	Biokinetics & Enzyme Technology Lab	BT	03	50	25	75

Elective A :

10BT-661 Animal BT
 10BT-662 Plant BT
 10BT-663 Microbial BT
 10BT-664 Perl Programming
 10BT-665 Transport Phenomena

VII SEMESTER B. E. BIO-TECHNOLOGY

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory / lab) (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory/ Practical	I A	Total
1	10BT-71	Economics & Plant Design	BT/ChE	04	100	25	125
2	10BT-72	Upstream Process Technology	BT	04	100	25	125
3	10BT-73	Downstream Process Technology	BT/ChE	04	100	25	125
4	10BT-74	Food Biotechnology	BT	04	100	25	125
5	10BT-75	Elective – B	BT/ChE/ CSE/ISE	04	100	25	125
6	10BT-76	Elective – C	BT/ChE/ CSE/ISE	04	100	25	125
7	10BTL-77	Upstream processing Lab	BT	03	50	25	75
8	10BTL-78	Downstream processing Lab	BT/ChE	03	50	25	75

Elective B :	Elective C :
10BT-751 Aqua Culture & Marine BT	10BT-761 Biochips & Micro array Technology
10BT-752 Dairy BT	10BT-762 Biomaterials
10BT-753 Forensic Science	10BT-763 Health Diagnostics
10BT-754 Data structures with C	10BT-764 Fundamentals of OS & DBMS
10BT-755 Bioreactor Design Concepts	10BT-765 CAD & MATLAB

VIII SEMESTER B. E. BIO-TECHNOLOGY

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory / lab) (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory/ Practical	I A	Total
1	10BT-81	Project Management & IPR	BT/MBA /ME/IEM	04	100	25	125
2	10BT-82	Bioethics & Biosafety	BT	04	100	25	125
3	10BT-83	Elective – D	BT/ChE/ BM	04	100	25	125
4	10BT-84	Elective – E	BT/ChE	04	100	25	125
5	10BT-85	Project Work	BT	15	100	100	200
6	10BT-86	Seminar	BT	09	---	50	50

Elective D :	Elective E :
10BT-831 Nano Bio-Technology	10BT-841 Environmental BT
10BT-832 Lab to Industrial Scaling	10BT-842 Metabolic Engineering
10BT-833 Protein Engg. & Insilico Drug Design	10BT-843 Medical Informatics
10BT-834 Biomedical Instrumentation	10BT-844 Tissue Engineering
10BT-835 Biomolecular Engineering	10BT-845 Facilitation, Validation & QC