

Annexure-I
HARCOURT BULTER TECHNICAL UNIVERSITY KANPUR
SCHOOL OF CHEMICAL TECHNOLOGY
DEPARTMENT OF BIOCHEMICAL ENGINEERING

Semester wise Course Structure

M. Tech. Chemical Technology –Biochemical Engineering
(Applicable from Session 2020-2021 for new entrants)

Year I, Semester-I

S. No.	Course Code	Subject	Periods			Credit
			L	T	P	
1	TCT- 551 TMA-551	Advance Modeling and Simulation of Chemical Engineering Systems ^A *Engineering Mathematics ^{BC}	3	1	0	4
2	TBE -551	Bioreactor Design and Analysis ^{ABC}	3	1	2	5
3	TBE-553	Structural and Molecular Biology ^{ABC}	3	1	0	4
4	Programme Elective TBE-555 TBE-557 TBE-559	Advanced Bioprocesses ^A Analytical Methods in Bioprocesses ^{ABC} Biochemical Engineering ^{BC}	3	1	0	4
Total			12	4	2	17

* Only for students of Non Mathematics background at Graduation level.

A – B.Tech./B.E. Degree in Biochemical Engineering,

B - B.Tech./B.E. Degree in Plastic Technology, Chemical Engineering, Paint Technology, Oil Technology, Leather Technology, Food Technology/Biotechnology or any other relevant/allied discipline.

C – M.Sc. Degree in Chemistry, Industrial Chemistry, Applied Chemistry, Biochemistry, Biotechnology, Microbiology, Life Sciences or any other relevant/allied disciplines

Year I, Semester-II

S.No	Course Code	Subject	Periods			Subject Total
			L	T	P	
1	TBE-552	Bioseparation and Downstream Processing	3	1	2	5
2	TBE-554	Bioprocess Technology	3	1	0	4
3	TBE-556	Biological Waste Treatment	3	1	0	4
4	Programme Elective TBE-558 TBE-560	Plant Biotechnology Animal Cell Culture and Tissue Engineering	3	1	0	4
Total			12	4	2	17

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Year II, Semester-III

S. No.	Course Code	Subject	Periods			Credit
			L	T	P	
1	TBE-659	Industrial Enzymes	3	1	0	4
2	Programme Elective TBE-653 TBE-655 TBE-657	Bioprocess Plant Design Bioentrepreneurship and Regulatory Issues Bioenergy	3	1	0	4
3	TBE-695	Seminar	0	0	4	2
4	TBE-697	Project Dissertation**	0	0	8	4
		Total	6	2	12	14

**dissertation to continue in fourth semester.

Year II, Semester-IV

S. No.	Course Code	Subject	Periods			Subject Total
			L	T	P	
1	TBE-698	Research Project	0	0	24	12
		Total	0	0	24	12

TotalCredit: 60