

Curriculum for B.Tech. Chemical and Biochemical Engineering Program

Semester : 1				
Minimum Semester Credit Required :21 Cumulative Semester Credit Required : 21				
Course Code	Subject No.	Subject Name	L-T-P	Credits
E.S.		Engineering Mechanics	3-0-0	3
E.S.		Basic Electrical Technology	3-0-0	3
B.S.		Mathematics (MATLAB/Mathematica)	3-0-0	3
B.S.		Physics	3-0-0	3
B.S.		Biosciences	2-0-0	2
HSS		H.S.S. – I (communication skills)	3-0-0	3
Lab		Physics Lab	0-0-3	2
Lab		Electrical Tech Lab	0-0-3	2
		Total	17-0-6	21
Semester : 2				
Minimum Semester Credit Required :21 Cumulative Semester Credit Required : 42				
Course Code	Subject No.	Subject Name	L-T-P	Credits
E.S.		Programming and Data Structure	3-0-0	3
E.S.		Basic Electronics	3-0-0	3
B.S.		Statistics	3-0-0	3
B.S.		Chemistry	3-0-0	3
Lab		Computer aided engineering drawings	1-0-3	3
Lab		Programming and Data Structure lab	0-0-3	2
Lab		Chemistry Lab	0-0-3	2
Lab		Basic Electronics Lab	0-0-3	2
		Total	13-0-12	21
Semester : 3				
Minimum Semester Credit Required : 22 Cumulative Semester Credit Required : 64				
Course Code	Subject No.	Subject Name	L-T-P	Credits
E.S.		Fluid Mechanics	3-0-0	3
B.S.		Material Science	2-0-0	2
B.S.		Environmental Sciences	2-0-0	2
P.C.		Transport Phenomena – I	3-0-0	3
P.C.		Materials and Energy Balance	3-0-0	3
H.S.S.		H.S.S. – II	3-0-0	3
H.S.S.		H.S.S. – III	3-0-0	3
Lab		Fluid Flow Lab	0-0-3	2
Project		Project – I	0-0-1	1
		Total	19-0-4	22
Semester : 4				
Minimum Semester Credit Required : 16 Cumulative Semester Credit Required : 80				
Course Code	Subject No.	Subject Name	L-T-P	Credits
E.S.		Thermodynamics	3-0-0	3
P.C.		Separation Process - I	3-0-0	3
P.C.		Mechanical Operations	3-0-0	3
H.S.S		H.S.S. – IV	3-0-0	3
G.R		Group related activities	0-0-1	1
Lab		Heat Transfer Lab	0-0-3	2
Project		Paper – II	0-0-1	1
		Total	12-0-5	16

Semester : 5				
Minimum Semester Credit Required : 22 Cumulative Semester Credit Required : 102				
Course Code	Subject No.	Subject Name	L-T-P	Credits
P.C.		Separation Process – II	3-0-0	3
P.C.		Chemical Reaction Engineering	3-0-0	3
P.C.		Chemical Engineering Mathematics	3-0-0	3
P.C.		Chemical and Fuel Technology	3-0-0	3
H.S.S.		H.S.S. – V	3-0-0	3
Lab		Mechanical Operations Lab	0-0-3	2
Lab		Thermodynamics and Reaction Engineering Lab	0-0-3	2
Project		Paper – III	0-0-1	1
S.S.		Soft Skills	0-0-1	1
G.R.		Group related activities	0-0-1	1
		Total	15-0-9	22

Semester : 6				
Minimum Semester Credit Required : 18 Cumulative Semester Credit Required : 120				
Course Code	Subject No.	Subject Name	L-T-P	Credits
P.C.		Transport Phenomena – II	3-0-0	3
P.C.		Instrumentation and Process Control	3-0-0	3
P.C.		Departmental Elective – I	3-0-0	3
H.S.S.		H.S.S. – VI	3-0-0	3
Lab		Mass Transfer Lab	0-0-3	2
Lab		Energy Lab	0-0-3	2
G.R.		Group related activities	0-0-1	1
S.S.		Soft Skills	0-0-1	1
		Total	12-0-8	18

Semester : 7				
Minimum Semester Credit Required : 22 Cumulative Semester Credit Required : 142				
Course Code	Subject No.	Subject Name	L-T-P	Credits
P.C.		Departmental Elective – II	3-0-0	3
P.C.		Departmental Elective – III	3-0-0	3
P.C.		Open Elective – I	3-0-0	3
H.S.S.		H.S.S. – VII	3-0-0	3
Lab		Computer aided process engineering lab	0-0-3	2
Lab		Instrumentation and Process Control lab	0-0-3	2
Project		Mini Project	0-0-3	3
I.T.		Industrial Training Seminar	0-0-3	3
		Total	12-0-12	22

Semester : 8				
Minimum Semester Credit Required : 21 Cumulative Semester Credit Required : 163				
Course Code	Subject No.	Subject Name	L-T-P	Credits
P.C.		Departmental Elective – IV	3-0-0	3
P.C.		Departmental Elective – IV	3-0-0	3
P.C.		Departmental Elective – IV	3-0-0	3
H.S.S.		H.S.S. – VIII	3-0-0	3
Project		Major Project	0-0-9	9
		Total	12-0-9	21

List of Electives

List of Available Subjects for Elective

Elective	Subject Name
	Chemical Process Modelling
	Novel Separation
	Chemical Process Optimization
	Micro fluidics
	Process intensification
	Process Safety Engineering
	Biochemical Engineering
	Polymer Science
	Advanced Catalysis
	Petroleum Refining and Petrochemicals
	Colloids and Interfacial Science and Engineering
	Computer aided Process Engineering
	Energy Engineering
Micro specialization	
	Biotechnology (Courses: Microbiology, Metabolic Engineering, Downstream processing in biochemical engineering)
	Environmental Science and Engineering (Courses: Environmental biotechnology)
	Micro and Nanoscale Engineering (Courses: Collids and Interfacial Science, Microfluidics, Soft nano technology)
	Energy
	Pharmaceutical Engineering (Courses: Crystalization Process Engineering)
	Environmental Enzymes