

## Chemical and Biochemical Engineering

### SEMESTER - I (Common for all B.Tech Courses)

S.No	C. Code	Course	L	T	P	C
1	MA 101	Calculus	3	1	0	8
2	PH 101	Quantum Physics and Applications	2	1	0	6
3	CH 102	Fundamental Concepts and Applications of Chemistry	3	0	0	6
4	BB 103	Introduction to Modern biology	3	0	0	6
5	PH 113	Hands on Science Laboratory - I	0	0	3	3
6	CS 101	Computer Programming	3	0	2	8
7	HS 106	Design Thinking and Creativity	1	0	0	PP/NP
8	NO107/ NO105/ NO 106/ NO 108	NSO/NSS/NCC/NCA	0	0	2	2
First Semester Total Credits						37

### Semester II

S.No	Course Code	Course Name	L	T	P	C
1	MA 102	Linear Algebra	3	1	0	4
2	BB 201	Biomolecules	2	1	0	6
3	ME 111	Engineering Graphics Laboratory	1	0	3	5
4	ME 201	Engineering Mechanics	2	1	0	6
5	CS 201	Data Structures and Algorithms	3	0	0	6
6	CS 211	Data Structures and Algorithms Laboratory	0	0	3	3
7	ME 113	Hands on Engineering Laboratory	0	0	3	3
8	CL 101	Introduction to chemical Engineering	3	0	0	6
9	NO107/ NO105/ NO 106/ NO 108	NSO/NSS/NCC/NCA	0	0	2	2
Total Credits						39

### Semester III

S.No	Course Code	Course Name	L	T	P	C
1	CL 201	Introduction to Transport Phenomena	3	0	0	6
2	CL 204	Introduction to chemical engineering thermodynamics	3	0	0	6
3	ME 203	Fluid Mechanics	2	1	0	6
4	ME 222	Mechanics of Materials	2	1	0	6

5	EE 221	Introduction to Probability (1st Half)	3	0	0	3
6	EE 227	Data Analysis (2nd Half)	3	0	0	3
7	BB 301	Basics of Cell Biology and Genetics	3	0	0	6
8	CL 211	Chemical Engineering lab -I (Thermodynamics and fluid mechanics)	0	0	3	3
Total Credits						39

### Semester IV

S.No	Course Code	Course Name	L	T	P	C
1	ME 220	Heat Transfer	2	1	0	6
2	EE 101	Introduction to Electrical Systems and Electronics	3	0	0	6
3	MA 407	Introduction to Numerical Linear Algebra	3	1	0	4
4	MA 103	Differential Equations - I	3	1	0	4
5	BB 404	Biophysics	3	0	0	3
6	CL 202	Reaction engineering	3	0	0	6
7	CH 201	Organic Chemistry	3	0	0	3
8	CL 203	Mass transfer	3	0	0	6
Total Credits						38

### Semester V

S.No	Course Code	Course Name	L	T	P	C
1	CL 301	Process Equipment Design and Economics	3	0	0	6
2	HS 201	Economics	3	0	0	6
3	CL 212	Chemical Engineering lab -II (Heat Transfer & Solid mechanics)	0	0	3	3
4	CL 213	Chemical Engineering Lab III (mass transfer and reaction engineering)	0	0	3	3
5		Programme elective-I	3	0	0	6
6	CH 306	Electrochemistry	3	0	0	3
7	CH 304	Introduction to computational chemistry	3	0	0	3
8		Programme elective-II	3	0	0	6
Total Credits						36

### Semester VI (Yellow highlights are courses must for honors)

S.No	Course Code	Course Name	L	T	P	C
1	CH 402	Catalysis	3	0	0	3
2	CE 301	Environmental Studies	3	0	0	6

3	EE 226	Control systems and lab	2	0	2	6
4		Programme elective-III	3	0	0	6
5		Programme elective-IV	3	0	0	6
6		Scientific presentation	0	0	3	3
7	CL 401	Chemical reaction engineering-II	3	0	3	6
		Total Credits				30

<b>Semester VII (Yellow highlights are courses must for honors)</b>						
S.No	Course Code	Course Name	L	T	P	C
1		HSS Elective	3	0	0	6
2		Institute Elective-I	3	0	0	6
3		Institute Elective-II	3	0	0	6
4		Programme elective-V/ BTP-I	3	0	0	6
5		Programme elective-VI	3	0	0	6
6	CL 402	Advanced Transport phenomena	3	0	0	6
		Total Credits				24

<b>Semester VIII (Yellow highlights are courses must for honors)</b>						
S.No	Course Code	Course Name	L	T	P	C
1		Institute Elective-III	3	0	0	6
2		Institute Elective-IV/ HSS elective	3	0	0	6
3		Programme elective-VII/BTP -II	3	0	0	6
4		Programme elective-VIII	3	0	0	6
5		Programme elective-IX	3	0	0	6
		Total Credits				18

	Overall Credits Required (Minimum)					<b>261</b>
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