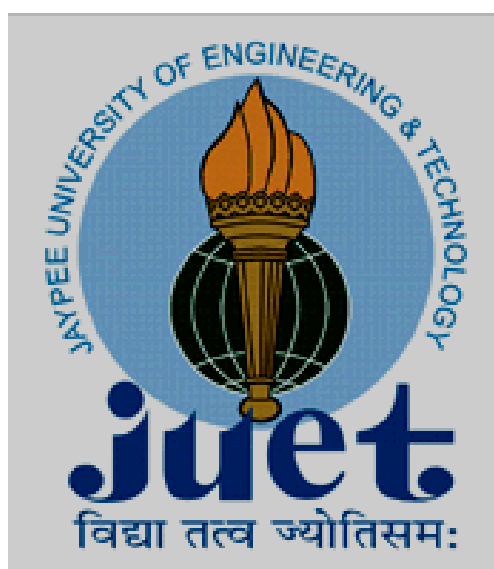


**COURSE STRUCTURE**  
**(w.e.f. 2018 batch onwards)**

**BACHELOR OF TECHNOLOGY**  
**(CHEMICAL ENGINEERING)**

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## 4 year B. Tech. (Chemical Engineering) Course Structure [From 2018-22 Batches]

### FIRST SEMESTER

Sr.No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	Maths	18B11MA111	Mathematics-I	3	1	-	4	4
2.	Physics	18B11PH111	Physics-1	3	1	-	4	4
3.	CSE	18B11CI111	Software Development Fundamentals	3	1	-	4	4
4.	HSS	18B11HS111	English	2	-	2	4	3
5.	Physics	18B17PH171	Physics Lab-1	-	-	2	2	1
6.	CSE	18B17CI171	Software Development Lab	-	-	4	4	2
7.	MEC	18B17ME171	Workshop	-	-	3	3	1.5
8	HSS	----	Value added course-1	-	-	-	2	0
			TOTAL				27	19.5

### SECOND SEMESTER

Sr.No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	HSS	21B11HS211	Life Skills and Effective Communication	1	-	2	3	2
2.	Maths	18B11MA201	Mathematics-2	3	1	-	4	4
3.	Chemistry	21B11CL212	Engineering Chemistry	3	1	-	4	4
4.	ECE	18B11EC212	Electrical Circuit Analysis	3	1	-	4	4
5.	MEC	18B11ME211	Engineering Mechanics	3	1	-	4	4
6.	Chemistry	18B17CL272	Chemistry Lab	-	-	2	2	1
7.	ECE	18B17EC272	Electrical Circuit Analysis Lab	-	-	2	2	1
8.	MEC	18B17ME271	Engineering Mechanics Lab	-	-	2	2	1
9.	MEC	18B17ME272	Engineering Drawing & Design Lab	-	-	3	3	1.5
10.	HSS	----	Value added course-2	-	-	-	2	0
			TOTAL				30	22.5

### THIRD SEMESTER

Sr.No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	CHE	18B11CL311	Chemical Process Calculations	3	1	-	4	4
2.	CHE	18B11CL312	Fluid and Fluid Particle Mechanics	3	1	-	4	4
3.	CHE	18B11CL313	Organic Chemistry	3	1	-	4	4
4.	CHE	18B17CL373	Organic Chemistry Lab	-	-	2	2	1
5.	CHE	18B17CL371	Fluid Mechanics Lab	-	-	2	2	1
6.	CHE	18B17CL372	Fluid Particle Mechanics Lab	-	-	2	2	1
7.	CHE	18B11CL314	Chemical Engineering Thermodynamics	3	1	-	4	4
8.	HSS	18B11HS311	Managerial Economics	2	1	-	3	3
9.	HSS	----	Value added course-3	-	-	-	2	0
10	CSE	21B19CI399	Programming in Python	-	-	-	2	0
			TOTAL				29	22

### FOURTH SEMESTER

Sr.No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	HSS	----	HSS Elective - 1	-	-	-	3	3
2.	Maths	18B11MA411	Numerical Methods	3	1	-	4	4
3.	CHE	18B11CL411	Heat Transfer Operations	3	1	-	4	4
4.	CHE	18B11CL412	Mass Transfer Operations	3	1	-	4	4
5.	CHE	18B19GE399	Environmental Science	2	-	-	2	2
6.	CHE	18B17CL471	Heat Transfer Operations Lab - 1	-	-	2	2	1
7.	CHE	18B17CL472	Mass Transfer Operations Lab	-	-	2	2	1
			TOTAL				21	19

## FIFTH SEMESTER

Sr.No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	HSS	----	HSS Elective-2	-	-	-	3	3
2.	CHE	18B11CL511	Chemical Reaction Engineering	3	1	-	4	4
3.	CHE	----	Discipline Elective -1	3	-	-	3	3
4.		----	Science Elective	3	-	-	3	3
5.	CHE	18B19CL591	Minor Project-1	-	-	4	4	2
6.	CHE	18B17CL571	Chemical Reaction Engineering Lab	-	-	2	2	1
7.	CHE	18B17CL572	Instrumentation and Process Control Lab	-	-	2	2	1
8.	CHE	18B17CL573	Heat Transfer Operations Lab-2	-	-	2	2	1
9.	CHE	18B11CL512	Instrumentation and Process Control	3	1	-	4	4
10	CHE	18B17CL574	Process Modelling and Simulation Lab	-	-	2	2	1
11	HSS	----	Value Added Course -4	-	-	-	2	0
			TOTAL				31	23

## SIXTH SEMESTER

Sr.No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	CHE	18B11CL611	Design of Separation Processes	3	-	-	3	3
2.	CHE	----	Discipline Elective – 2	3	-	-	3	3
3.	CHE	----	Discipline Elective - 3	3	-	-	3	3
4.	CHE	18B11CL612	Chemical Reactor Design	3	-	-	3	3
5.	CHE	18B17CL671	Design of Separation Processes Lab	-	-	2	2	1
6.	CHE	18B19CL692	Minor Project-2	-	-	6	6	3
7.	CHE	18B11CL613	Environmental Engineering	3	-	-	3	3
8.	CHE	18B17CL673	Environmental Engineering Lab	-	-	2	2	1
9.	HSS	----	HSS Elective - 3	-	-	-	3	3
			TOTAL				28	23

**Note:**

1. All students will undergo Value Added Course; however it will not count for CGPA calculations and will not be reflected in transcript of those students who fail to qualify.
2. Students will undergo 6 weeks Industrial Training during Summer Vacation after 6th Semester.

## SEVENTH SEMESTER

Sr.No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	CHE	----	Discipline Elective – 4	3			3	3
2.	CHE	----	Discipline Elective – 5	3			3	3
3.	CHE	----	Discipline Elective - 6	3	-	-	3	3
4.	HSS	----	Open Elective – 1	3		-	3	3
5.	CHE	18B19CL791	Major Project Part-1	-	-	8	8	4
6	CHE	18B19CL792	Summer Training Viva	-	-	-	-	Qualifyi ng
			TOTAL				20	16

## EIGHTH SEMESTER

Sr.No.	Department	CourseNo.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	CHE	----	Discipline Elective – 7	3			3	3
2.	CHE	----	Discipline Elective - 8	3			3	3
3.	(Engg. Only)	----	Open Elective -2	3		-	3	3
4.	CHE	18B19CL891	Major Project Part-2	-	-	1 6	16	8
			TOTAL				25	17

**Total Credits for B. Tech. –162**

### Value Added Courses

Course No.	Title	Contact Hours				Credits
		L	T	P	Total	
18B19HS491	Human Values and Professional Ethics	2	-	-	2	-
18B19HS492	Entrepreneurship and Startup Business	2	-	-	2	-
21B19HS399	Professional communication Practice	-	-	2	2	-
18B19HS599	Indian Constitution & Traditional Knowledge	2	-	-	2	-

## LIST OF ELECTIVES

### List of HSS Electives

Course No.	Title	Contact Hours				Credits
		L	T	P	Total	
18B14HS441	Concepts of Digital Marketing	3	-	-	3	3
21B14HS642	Concepts of Financial Management	2	1	-	3	3
18B14HS541	Logical & Quantitative Technique	3	-	-	3	3
18B14HS741	Knowledge management	3	-	-	3	3

**List of Science Electives:**

From Department with Science name or Physics or Chemistry or Maths with science code.

1. 18B14FS543 Nano-science and technology
2. Chemistry of Cement
3. Surface Science
4. 18B14ME544Material Science

**List of Discipline Electives:**

	<b>DISCIPLINE ELECTIVE 1</b>
18B14CL541	1. Process Modelling and Simulation
18B14CL542	2. Transport Phenomena
	<b>DISCIPLINE ELECTIVE 2</b>
18B14CL641	1. Chemical Processes
18B14CL642	2. Industrial organic Synthesis
	<b>DISCIPLINE ELECTIVE 3</b>
18B14CL643	1. Equipment Design and Drawing
18B14CL644	2. Food Process Engineering
18B14CL645	3. Solid and Hazardous Waste Management
	<b>DISCIPLINE ELECTIVE 4</b>
18B14CL741	1. Process Engineering and Safety
18B14CL742	2. Energy Sources and Energy Conservation
18B14CL743	3. Polymer Engineering
	<b>DISCIPLINE ELECTIVE 5</b>
18B14CL744	1. Petroleum Refining
18B14CL745	2. Project Engineering
18B14CL746	3. Pharmaceutical Technology
18B14CL747	4. Multiphase Reactor Design
	<b>DISCIPLINE ELECTIVE 6</b>
18B14CL748	1. Membrane Process Design
18B14CL749	2. Industrial Catalysis
18B14CL750	3. Advanced Process Control
18B14CL751	4. Fluidization Engineering
	<b>DISCIPLINE ELECTIVE 7</b>
18B14CL841	1. Fertilizer Technology
18B14CL842	2. Petrochemical Technology
18B14CL843	3. Mixing Technology
18B14CL844	4. Piping Engineering
	<b>DISCIPLINE ELECTIVE 8</b>
18B14CL845	1. Cement Manufacturing
18B14CL846	2. Plant Utilities and Energy Systems
18B14CL847	3. Co-generation
18B14CL848	4. Thermal Energy Generation Systems

Note: List of electives and value added courses can be updated time to time.