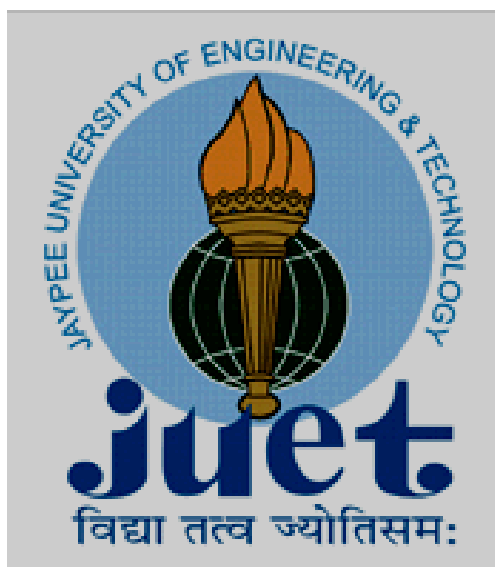


COURSE STRUCTURE
(w.e.f. 2023 batch onwards)

BACHELOR OF TECHNOLOGY
(CHEMICAL ENGINEERING)



Department of Chemical Engineering
Jaypee University of Engineering & Technology

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4 year B. Tech. (Chemical Engineering) Course Structure w.e.f. 2023-24 Batch

FIRST SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	Maths	MA102	Engineering Mathematics-I	3	1	-	4	4
2.	Physics	PH103	Engineering Physics	3	1	-	4	4
3.	CSE	CS101	Computer Programming	3	1	-	4	4
4.	HSS	HS101	English	2	-	2	4	3
5.	Physics	PH203	Engineering Physics Lab	-	-	2	2	1
6.	CSE	CS201	Computer Programming Lab	-	-	4	4	2
7.	MEC	ME201	Workshop Practices	-	-	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	HS104	Life Skills and Effective Communication	1	-	2	3	2
2.	Maths	MA103	Engineering Mathematics-2	3	1	-	4	4
3.	Chemistry	CH103	Engineering Chemistry	3	1	-	4	4
4.	ECE	EC102	Electrical Circuit Analysis	3	1	-	4	4
5.	MEC	ME101	Engineering Mechanics	3	1	-	4	4
6.	Chemistry	CH202	Engineering Chemistry Lab	-	-	2	2	1
7.	ECE	EC206	Electrical Circuit Analysis Lab	-	-	2	2	1
8.	MEC	ME202	Engineering Mechanics Lab	-	-	2	2	1
9.	MEC	ME203	Engineering Drawing and Design Lab	-	-	3	3	1.5
			TOTAL				30	22.5

Students may undergo optional Industrial Training during Summer Vacation after 2nd Semester.

THIRD SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	CHE	CL101	Chemical Process Calculations	3	1	-	4	4
2.	CHE	CL102	Fluid and Fluid Particle Mechanics	3	1	-	4	4
3.	CHE	CH102	Organic Chemistry	3	1	-	4	4
4.	CHE	CH203	Organic Chemistry Lab	-	-	2	2	1
5.	CHE	CL201	Fluid Mechanics Lab	-	-	2	2	1
6.	CHE	CL202	Fluid Particle Mechanics Lab	-	-	2	2	1
7.	CHE	CL103	Chemical Engineering Thermodynamics	3	1	-	4	4
8.	HSS	HS102	Managerial Economics	2	1	-	3	3
9.	HSS	----	Value added course-2	-	-	-	2	0
10	CSE		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	MA105	Numerical Methods	3	1	-	4	4
3.	CHE	CL104	Heat Transfer Operations	3	1	-	4	4
4.	CHE	CL105	Mass Transfer Operations	3	1	-	4	4
5.	CHE	G001	Environmental Science	2	-	-	2	0
6.	CHE	CL203	Heat Transfer Operations Lab - 1	-	-	2	2	1
7.	CHE	CL204	Mass Transfer Operations Lab-1	-	-	2	2	1
			TOTAL				21	17

Students will undergo 4 weeks Industrial Training during Summer Vacation after 4th Semester.

FIFTH SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	HSS	----	HSS Elective-2	-	-	-	3	3
2.	CHE	CL106	Chemical Reaction Engineering-I	3	1	-	4	4
3.	CHE	----	Discipline Elective -1	3	-	-	3	3
4.		----	Science Elective	3	-	-	3	3
5.	CHE	CL205	Minor Project-1	-	-	4	4	2
6.	CHE	CL206	Chemical Reaction Engineering Lab	-	-	2	2	1
7.	CHE	CL207	Instrumentation and Process Control Lab	-	-	2	2	1
8.	CHE	CL208	Heat Transfer Operations Lab-2	-	-	2	2	1
9.	CHE	CL107	Instrumentation and Process Control	3	1	-	4	4
10	CHE	CL209	Process Modeling and Simulation Lab	-	-	2	2	1
			TOTAL				31	23

SIXTH SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	CHE	CL108	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	CL109	Chemical Reaction Engineering-II	3	-	-	3	3
5.	CHE	CL210	Mass Transfer Operations Lab-2	-	-	2	2	1
6.	CHE	CL211	Minor Project-2	-	-	6	6	3
7.	CHE	CL110	Environmental Engineering	3	-	-	3	3
8.	CHE	CL212	Environmental Engineering Lab	-	-	2	2	1
9.	HSS	----	HSS Elective - 3	-	-	-	3	3
			Value Added Course-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	CL213	Major Project Part-1	-	-	8	8	4
6	CHE	CL001	Summer Training Viva	-	-	-	-	Qualifying
			Value Added Course-4					
			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	CL214	Major Project Part-2	-	-	16	16	8
			TOTAL				25	17

Total Credits for B. Tech. –160

Value Added Courses

Course No.	Title	Contact Hours				Credits
		L	T	P	Total	
HS001	Human Values and Professional Ethics	2	-	-	2	-
HS002	Professional Communication Practice	2	-	-	2	-
HS003	Concept of Project Management	-	-	2	2	-
HS004	Indian Constitution & Traditional Knowledge	2	-	-	2	-

LIST OF ELECTIVES

List of HSS Electives

Course No.	Title	Contact Hours				Credits
		L	T	P	Total	
HS304	Concepts of Digital Marketing	3	-	-	3	3
HS302	Concepts of Financial Management	2	1	-	3	3

HS305	Logical & Quantitative Technique	3	-	-	3	3
HS303	Knowledge management	3	-	-	3	3

List of Science Electives:

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

1. CH301Chemistry of Cement
2. CH302Surface Science
3. ME301 Material Science

List of Discipline Electives:

	DISCIPLINE ELECTIVE 1
CL301	1. Process Modelling and Simulation
CL302	2. Transport Phenomena
	DISCIPLINE ELECTIVE 2
CL303	1. Chemical Processes
CL304	2. Industrial organic Synthesis
	DISCIPLINE ELECTIVE 3
CL305	1. Equipment Design and Drawing
CL306	2. Solid and Hazardous Waste Management
	DISCIPLINE ELECTIVE 4
CL307	1. Energy Sources and Energy Conservation
CL308	2. Polymer Engineering
	DISCIPLINE ELECTIVE5
CL309	1. Petroleum Refining
CL310	2. Multiphase Reactor Design
	DISCIPLINE ELECTIVE 6
CL311	1. Industrial Catalysis
CL312	2. Advanced Process Control
	DISCIPLINE ELECTIVE 7
CL313	1. Fertilizer Technology
CL314	2. Petrochemical Technology
CL327	3.Piping Engineering
	DISCIPLINE ELECTIVE 8
CL315	1. Plant Utilities and Energy Systems
CL316	2. Co-generation
CL328	3. Cement Technology

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