

B.Tech. Chemical Engineering Curriculum (2020-24 batch)

The B.Tech. Chemical Engineering course curriculum requires students to complete a minimum of 160 credits.

Overall Credit Distribution

S.No.	Category	Credits
1.	Core Common Curriculum (CCC)*	18
2.	University Wide Elective (UWE)*	18
3	UWE/CCC*	6
4.	Basic Sciences (BS)	28
5.	Engineering Sciences (ES)	15
6.	Major Core	51
7.	Project (Major + Minor)	12
8.	Major Elective	12
	Total Credits	160

**All Chemical Engineering students should register for a minimum of 18 CCC and 18 UWE credits. The total credits for CCC and UWE combined should be a minimum of 42.*

Semesters	Semester Wise Credits	Core Courses Credits
Semester - 1	21	17
Semester - 2	23	20
Semester - 3	24	15
Semester - 4	24	15
Semester - 5	23	14
Semester - 6	23	17
Semester - 7	17	14
Semester - 8	06	06
Total	161[#]	118

The additional one credit coming due to one compulsory CCC of 4 credits. The same can be compensated by proper choice of CCC/ UWE with one credit less in the later semesters to make it 160 credits.

Core Courses include Basic Sciences, Engineering Sciences, Major Core, Minor Electives and Project.

Courses: Category wise

Basic Sciences				
S.No.	Code	Courses	L:T:P	Credits
1.	BIO 113	Essentials of Biology	3:00:00	3
2.	CHY 111	Chemical Principles	3:01:01	5
3.	MAT 103	Mathematical Methods-I	3:01:00	4
4.	MAT 104	Mathematical Methods-II	3:01:00	4
5.	MAT 205	Mathematical Methods-III – Prob. and Stat	3:00:00	3
6.	PHY 101	Introduction to Physics-I	3:01:00	4
7.	PHY 102	Introduction to Physics-II	3:01:01	5
Total				28

Engineering Sciences				
S.No.	Code	Courses	L:T:P	Credits
1.	CED 101	Engineering Mechanics	3:01:00	4
2.	CSD 101	Introduction to Computing and Programming	3:00:01	4
3.	MED 101	Manufacturing Processes	1:00:01	2
4.	MED 104	Descriptive Engg. Drawing	1:00:01	2
5.	MED 201	Material Science and Engineering	3:00:00	3
Total				15

Major Core Courses				
S.No.	Code	Courses	L:T:P	Credits
1.	CHD 216	Fluid Mechanics	03:00:00	3
2.	CHD 217	Chemical Engineering Thermodynamics	03:00:00	3
3.	CHD 213	Material and Energy Balance	03:00:00	3
4.	CHD 226	Heat Transfer	03:00:00	3
5.	CHD 227	Mechanical Operations	03:00:00	3
6.	CHD 223	Industrial and Engineering Chemistry	3:00:00	3
7.	CHD 225	Chemical Reaction Engineering – I	3:00:00	3
8.	CHD 320	Process Dynamics and Control	03:00:00	3
9.	CHD 318	Mass Transfer-I	03:00:00	3
10.	CHD 310	Chemical Reaction Engineering – II	03:00:00	3
11.	CHD 319	Chemical Engineering Laboratory -I	0:00:02	2
12.	CHD 327	Mass Transfer-II	03:00:00	3
13.	CHD 328	Transport Phenomenon	03:00:00	3
14.	CHD 323	Chemical Engineering Laboratory -II	0:00:02	2
15.	CHD 413	Chemical Technology	3:00:00	3
16.	CHD 415	Process Equipment Design	3:00:00	3
17.	CHD 416	Chemical Process Safety	3:00:00	3
18.	CHD 418	Chemical Engineering Laboratory -III	0:00:02	2
Total				51

Projects				
S.No.	Code	Courses	L:T:P	Credits
1.	CHD 417	Minor Project	00:00:12	6
2.	CHD 440	Major Project	00:00:12	6
Total				12

Major Elective Courses				
S.No.	Code	Courses	L:T:P	Credits
1.	CHD 262	Major Elective : Numerical Methods	3:00:00	3
2.	CHD 372	Major Elective : Computational Fluid Dynamics	2:00:01	3
3.	CHD 384	Major Elective : Modeling and Simulation of Chemical Engineering Systems	03:00:00	3
4.	CHD 471	Major Elective : Process Engineering	3:00:00	3
Total				12

Courses: Semester wise

First Semester

S.No.	Code	Courses	L:T:P	Credits
1	CCC 704	CCC - Environmental Studies -Compulsory		4
2	CHY 111	Chemical Principles	03:01:01	5
3	MAT 103	Mathematical Methods-I	03:01:00	4
4	MED 101	Manufacturing Processes	01:00:01	2
5	MED 104	Descriptive Engg. Drawing	01:00:01	2
6	PHY 101	Introduction to Physics-I	03:01:00	4

Total	21
Credits	Cumulative
Core	17
UWE	0
CCC	4
Total	21

Second Semester

S.No.	Code	Courses	L:T:P	Credits
1	BIO 113	Essentials of Biology	03:00:00	3
2	CED 101	Engineering Mechanics	03:01:00	4
3	CSD 101	Introduction to Computing and Programming	03:00:01	4
4	MAT 104	Mathematical Methods-II	03:01:00	4
5	PHY 102	Introduction to Physics-II	03:01:01	5
6		CCC 2+3		3

Total	23
Credits	Cumulative
Core	20
UWE	0
CCC	3
Total	23
	44

Third Semester

S.No.	Code	Courses	L:T:P	Credits
1	CHD 216	Fluid Mechanics	03:00:00	3
2	CHD 217	Chemical Engineering Thermodynamics	03:00:00	3
3	CHD 213	Material and Energy Balance	03:00:00	3
4	MAT 205	Mathematical Methods-III – Prob. and Stat	03:00:00	3
5	MED 201	Material Science and Engineering	03:00:00	3
6		CCC 4+5		3
7		UWE-1		3
8		UWE-2		3

Total	24
Credits	Cumulative
Core	15
UWE	6
CCC	3
Total	24
	68

Fourth Semester

S.No.	Code	Courses	L:T:P	Credits
1	CHD 226	Heat Transfer	03:00:00	3
2	CHD 227	Mechanical Operations	03:00:00	3
3	CHD 223	Industrial and Engineering Chemistry	03:00:00	3
4	CHD 225	Chemical Reaction Engineering – I	03:00:00	3
5	CHD 262	Major Elective : Numerical Methods	03:00:00	3
6		CCC 6+7		3
7		UWE-3		3
8		UWE-4		3

Total	24
Credits	Cumulative
Core	15
UWE	6
CCC	3
Total	24
	92

Fifth Semester

S.No.	Code	Courses	L:T:P	Credits
1	CHD 320	Process Dynamics and Control	03:00:00	3
2	CHD 318	Mass Transfer-I	03:00:00	3
3	CHD 310	Chemical Reaction Engineering – II	03:00:00	3
4	CHD 319	Chemical Engineering Laboratory – I (FM&HT)	00:00:02	2
5	CHD 372	Major Elective : Computational Fluid Dynamics	02:00:01	3
6		CCC 8+9		3
7		UWE-5		3
8		UWE-6		3

Total	23
Credits	Cumulative
Core	14
UWE	6
CCC	3
Total	23
	81
	18
	16
	115

Sixth Semester

S.No.	Code	Courses	L:T:P	Credits
1	CHD 327	Mass Transfer-II	03:00:00	3
2	CHD 328	Transport Phenomenon	03:00:00	3
3	CHD 323	Chemical Engineering Laboratory –II (MO&CRE)	00:00:02	2
4	CHD 413	Chemical Technology	03:00:00	3
5	CHD 384	Major Elective : Modeling and Simulation of Chemical Engineering Systems	03:00:00	3
6	CHD 415	Process Equipment Design	03:00:00	3
7		CCC 10+11		3
8		UWE-7		3

Total	23
Credits	Cumulative
Core	17
UWE	3
CCC	3
Total	23
	98
	21
	19
	138

Seventh Semester

S.No.	Code	Courses	L:T:P	Credits
1	CHD 416	Chemical Process Safety	03:00:00	3
2	CHD 417	Minor Project	00:00:12	6
3	CHD 471	Major Elective : Process Engineering	03:00:00	3
4	CHD 418	Chemical Engineering Laboratory –III (MT&PDC)	00:00:02	2
5		UWE-8		3

Total 17
Credits **Cumulative**

Core 14 112
UWE 3 24
CCC 0 19
Total 17 155

Eighth Semester

S.No.	Code	Courses	L:T:P	Credits
1	CHD 440	Major Project	00:00:12	6

Total 12
Credits **Cumulative**

Core 6 118
UWE 0 24
CCC 0 19
Total 6 161