

Chemical Engineering

BACHELOR OF TECHNOLOGY (CHEMICAL)

First Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	MAN-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2	CYN-001	Physical Chemistry	BSC	4	3	0	2	3	0	15	25	20	40	-
3	CEN-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	25	-	25	50	-
4	HSN-001A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
	HSN-001B	Communication Skills (Advance)	HSSC	2	1	-	2	2	-	25	-	25	50	-
5	HSN-002	Ethics and Self-awareness	HSSC	2	1	1	0	2	0	15	-	35	50	-
6	CHN-101	Introduction to Chemical Engineering	PCC	2	2	0	0	0	0	-	-	-	100	-
7	CHN-103	Computer Programming and Numerical Methods	ESC	4	3	0	2	3	0	15	25	20	40	-

First Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CYN-002	Organic and Inorganic Chemistry	BSC	4	3	1	2/2	3	0	20	20	20	40	-
2	MAN-002	Mathematical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
3	CHN-102	Material and Energy Balance	PCC	4	3	1	0	3	0	25	-	25	50	-
4	CHN-104	Fluid Dynamics	PCC	4	3	1	2/2	3	2	20	20	20	40	-
5	CHN-106	Thermodynamics and Chemical Kinetics	PCC	4	3	1	0	3	0	25	-	25	50	-
6	EEN-112	Electrical Science	ESC	4	3	1	2/2	3	0	20	20	20	40	-

Second Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-201	Heat Transfer	PCC	4	3	1	2/2	3	3	20	20	20	40	-
2	CHN-203	Mechanical Operations	PCC	4	3	1	2/2	3	2	20	20	20	40	-
3	CHN-205	Chemical Engineering Thermodynamics	PCC	4	3	1	0	3	0	25	-	25	50	-
4	CHN-207	Transport Phenomena	PCC	4	3	1	0	3	0	25	-	25	50	-
5	MIN-108	Mechanical Engineering Drawing	ESC	4	2	0	4	0	4	-	25	25	-	50
6	HSN-ELE	HSS Elective Course	HSSMEC	3	3	0	0	3	0	25	-	25	50	-

Second Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-202	Mass Transfer -I	PCC	3	2	1	2/2	2	3	20	20	20	40	-
2	CHN-204	Reaction Engineering	PCC	5	3	1	4/2	3	4	20	20	20	40	-
3	CHN-206	Chemical Technology	PCC	3	3	0	0	3	0	25	-	25	50	-
4	CHN-210	Industrial Instrumentation	PCC	2	2	0	0	2	0	25	-	25	50	-
5	CHN-112	Energy Engineering	ESC	4	3	1	0	3	0	25	-	25	50	-
6	CHN-291	Equipment Design*	PCC	4	3	0	2	4	0	15	25	20	40	-

Third Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-301	Mass Transfer-II	PCC	5	3	1	3/2	3	3	20	20	20	40	-
2	CHN-303	Process Dynamics and Control	PCC	4	3	1	2/2	3	3	20	20	20	40	-
3	CHN-305	Process Equipment Design*	PCC	4	3	0	2	4	0	15	25	20	40	-
4	CHN-ELE1	Departmental Elective Course-1	PEC	4	3	1	0	3	0	25	-	25	50	-
5	OEC	Open Elective Course	OEC	3	3	0	0	3	0	25	-	25	50	-
6	CHN-391	Technical Communication	PCC	2	0	2	0	0	0	100		-	-	-

Third Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-300	CaseStudy	PCC	3	0	0	3	0	0	-	-	-	100	-
2	CHN-302	Engineering Analysis and Process Modeling	PCC	4	3	1	0	3	0	25	-	25	50	-
3	CHN-304	Process Economics and Plant Design	PCC	3	3	0	0	3	0	25	-	25	50	-
4	CHN-306	Process Utilities and Safety	PCC	3	3	0	0	3	0	25	-	25	50	-
5	CHN-ELE2	Departmental Elective Course-II	PEC	4	3	1	0	3	0	25	-	25	50	-
6	MSC1/ DHC1	Minor Specialization Course-I/Departmental Honours Course-I	MSC/D HC	4	3	1	0	3	0	25	-	25	50	-
7	BM-ELE	Any one Elective course from 'Management Studies'	HSSMEC	3	3	0	0	3	0	25	-	25	50	-
8	CHN-399	Educational Tour	PCC	0	0	0	0	0	0	-	-	-	-	-

Fourth Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-400A	B. Tech. Project	PCC	4	0	0	4	0	0	-	-	-	-	-
2	CHN-ELE3	Department Elective Course- III	PEC	4	3	1	0	3	0	25	-	25	50	-
3	CHN-ELE4	Department Elective Course- IV	PEC	4	3	1	0	3	0	25	-	25	50	-
4	MSC2/ DHC2	Minor Specialization Course-II/Departmental Honours Course-II	MSC/D HC	4	3	1	0	3	0	25	-	25	50	-
5	MSC3/ DHC3	Minor Specialization Course-III/Departmental Honours Course-III	MSC/D HC	4	3	1	0	3	0	25	-	25	50	-
6	CHN-499	Training Seminar	PCC	2	0	2	0	0	0	100	-	-	-	-

Fourth Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-400B	B. Tech. Project (Contd. From Autumn Semester)	PCC	8	0	0	8	0	10	-	-	-	100	-
2	CHN-ELE5	Department Elective Course- V	PEC	4	3	1	0	3	0	25	-	25	50	-
3	CHN-ELE6	Department Elective Course- VI	PEC	4	3	1	0	3	0	25	-	25	50	-
4	MSC4/ DHC4	Minor Specialization Course-IV/Departmental Honours Course-IV	MSC/D HC	4	3	1	0	3	0	25	-	25	50	-
5	MSC5/ DHC5	Minor Specialization Course-V/Departmental Honours Course-V	MSC/D HC	4	3	1	0	3	0	25	-	25	50	-

Department Electives

Category-1

Category-2 Stream 1

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-321	Biochemical Engineering	PEC	4	3	1	0	3	0	25	-	25	50	-
2	CHN-322	Optimization of Chemical Engineering Processes	PEC	4	3	1	0	3	0	25	-	25	50	-
3	CHN-323	Computer Application in Chemical Engineering	PEC	4	3	1	0	3	0	25	-	25	50	-
4	CHN-324	Computational Fluid Dynamics	PEC	4	3	1	0	3	0	25	-	25	50	-
5	CHN-325	Process Integration	PEC	4	3	1	0	3	0	25	-	25	50	-
6	CHN-326	Fluidization Engineering	PEC	4	3	1	0	3	0	25	-	25	50	-
7	CHN-327	Petroleum Refining	PEC	4	3	1	0	3	0	25	-	25	50	-
8	CHN-328	Petrochemicals	PEC	4										
9	CHN-329	Fertilizer Technology	PEC	4	3	1	0	3	0	25	-	25	50	-

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-411	Polymer Physics and Rheology*	PEC	4	3	1	0	3	0	25	-	25	50	-
2	CHN-412	Modeling of Dynamics System*	PEC	4	3	1	0	3	0	25	-	25	50	-
3	CHN-413	Novel Separation Techniques*	PEC	4	3	1	0	3	0	25	-	25	50	-
4	CHN-414	Advanced Process Control*	PEC	4	3	1	0	3	0	25	-	25	50	-
5	CHN-415	Heterogeneous Catalysis & Reactor Design*	PEC	4	3	1	0	3	0	25	-	25	50	-
6	CHN-416	Design of Piping System	PEC	4	3	1	0	3	0	25	-	25	50	-
7	CHN-418	Advances in Fluid Mechanics*	PEC	4	3	1	0	3	0	25	-	25	50	-
8	CHN-419	Probability and System's Reliability	PEC	4	3	1	0	3	0	25	-	25	50	-
9	CHN-420	Advances in Heat Transfer*	PEC	4	3	1	0	3	0	25	-	25	50	-
10	CHN-423	Microfluidics*	PEC	4	3	1	0	3	0	25	-	25	50	-
11	CHN-425	Nanotechnology in Chemical Engineering*	PEC	4	3	1	0	3	0	25	-	25	50	-
12	CHN-431	Fuel Cells Fundamentals*	PEC	4	3	1	0	3	0	25	-	25	50	-

Category- 2 Stream 2

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1	CHN-413	Novel Separation Techniques*	PEC	4	3	1	0	3	0	25	-	25	50	-
2	CHN-419	Probability and System's Reliability	PEC	4	3	1	0	3	0	25	-	25	50	-
3	CHN-425	Nanotechnology in Chemical Engineering*	PEC	4	3	1	0	3	0	25	-	25	50	-
4	CHN-431	Fuel Cells Fundamentals*	PEC	4	3	1	0	3	0	25	-	25	50	-
5	CHN-417	Industrial Safety & Hazards Management	PEC	4	3	1	0	3	0	25	-	25	50	-
6	CHN-427	Clean Technology in Process Industries	PEC	4	3	1	0	3	0	25	-	25	50	-
7	CHN-429	Waste-to-Energy*	PEC	4	3	1	0	3	0	25	-	25	50	-
8	CHN-424	Industrial Pollution Abatement	PEC	4	3	1	0	3	0	25	-	25	50	-
9	CHN-511	Air Pollution Control Engineering	PEC	4	3	1	0	3	-	25	-	25	50	-
10	CHN-513	Water Pollution Control	PEC	4	3	0	2	3	-	15	25	20	40	-

		Engineering												
11	CHN-515	System Approach to Environmental Engineering*	PEC	4	3	0	2	3	-	15	25	20	40	-
12	CHN-571	Data Acquisition and Monitoring Techniques	PEC	4	3	1	0	3	-	25	-	25	50	-
13	CHN-582	Environmental Impact Assessment*	PEC	4	3	1	0	3	-	25	-	25	50	-
14	CHN-586	Design of Pollution Control Systems*	PEC	4	3	1	0	3	-	25	-	25	50	-
15	CHN-590	Environmental Chemistry	PEC	4	3	1	0	3	-	25	-	25	50	-

Honours degree will be given to those student who study *mark courses.

Department of Chemical Engineering Minor Specialization Course

Sl. No.	Subject Code	Course Title	Semester		Credits
			Autumn	Spring	
1.	CHN-102	Material and Energy Balance		√	4
2.	CHN-104	Fluid Dynamics		√	4
3.	CHN-106	Thermodynamics and Chemical Kinetics		√	4
4.	CHN-201	Heat Transfer	√		4
5.	CHN-203	Mechanical Operations	√		4
6.	CHN-205	Chemical Engineering Thermodynamics	√		4
7.	CHN-207	Transport Phenomena	√		4
8.	CHN-202	Mass Transfer-I		√	3
9.	CHN-204	Reaction Engineering		√	5
10.	CHN-301	Mass Transfer-II	√		5