

Name of the Department: Chemical Engineering

Study Scheme for Bachelor of Engineering in Chemical Engineering

Semester-I

S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	BSMA-401	Engineering Mathematics I	3	1	0	4	4
2	BSCH-401	Applied Chemistry	3	1	0	4	4
3	ESME-401	Elements of Mechanical Engineering	2	1	0	3	3
4	ESME-402	Workshop Technology and Practice	1	0	0	1	1
5	HSMC-401	English Communication and Soft Skills	1	0	0	1	1
6	BSCH-402	Applied Chemistry Lab	0	0	2	2	1
7	ESME-403	Elements of Mechanical Engineering Lab	0	0	2	2	1
8	ESME-404	Engineering Drawing	0	0	4	4	2
9	ESME-405	Workshop Technology and Practice Lab	0	0	4	4	2
10	HSMC-402	English Communication and Soft Skills Lab	0	0	2	2	1
11	MCCH-401	Environmental Studies	3	0	0	3	0
		Total	13	3	14	30	20

Semester-II A

S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	BSMA-402	Engineering Mathematics II	3	1	0	4	4
2	BSPH-401	Applied Physics	3	1	0	4	4
3	ESEE-401	Elements of Electrical Engineering	2	1	0	3	3
4	ESCS-401	Elements of Computer Engineering	2	0	0	2	2
5	ESEC-401	Elements of Electronics Engineering	2	0	0	2	2
6	BSPH-402	Applied Physics Lab	0	0	2	2	1
7	ESEE-402	Elements of Electrical Engineering Lab	0	0	2	2	1
8	ESCS-402	Elements of Computer Engineering Lab	0	0	4	4	2
9	ESEC-402	Elements of Electronics Engineering Lab	0	0	2	2	1
		Total	12	3	10	25	20

Semester-II B

1	TPIN-421	Practical Training During Summer Vacations (In-house) 02 weeks				80	1 (S/US)
2	TPIN-422	Technical Competency					1 (S/US)

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Semester-III							
S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	ESME-501	Engineering Mechanics	3	1	0	4	4
2	PCCH-511	Material and Energy Balance	3	1	0	4	4
3	PCCH-512	Fluid Mechanics	3	0	0	3	3
4	PCCH-513	Chemical Engineering Thermodynamics	3	1	0	4	4
5	HSMC-501	Principles of management	3	0	0	3	3
6	PCCH-514	Fluid Mechanics lab	0	0	2	2	1
7	PCCH-515	Process Technology lab	0	0	2	2	1
8.	MCMH-501	INDIAN Total CONSTITUTION	3	0	0	3	20
		Total					20
9*	MDCH-511	Chemical Process Calculation	2	0	0	2	2
	MDCH-512	Chemical Process Industries	2	0	0	2	2
Semester-IVA							
S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	BSMA-501	Numerical and Statistical Methods	3	0	0	3	3
2	BSMA-502	Numerical and Statistical Methods Lab	0	0	2	2	1
3	BSBL-501	Biology for Engineers	2	0	0	2	2
4	PCCH-521	Mass Transfer - I	3	1	0	4	4
5	PCCH-522	Heat Transfer	3	1	0	4	4
6	PCCH-523	Fluid and Particle Mechanics	3	1	0	4	4
7	PCCH-524	Heat & Mass Transfer Lab	0	0	2	2	1
8	PCCH-525	Fluid and Particle Mechanics Lab	0	0	2	2	1
		Total					20
9*	MDCH-521	Heat Transfer	2	1	0	3	3
	MDCH-522	Heat & Mass Transfer Lab	0	0	2	2	1
Semester-IVB							
1	TPID-521	Industrial Training 02 weeks				80	1 (S/US)
2	EAA-521+	Fractional credit course/Extra Academic Activity +GROUP A/B/C					1 (S/US)

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Semester-VA

S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	HSMC-603	Engineering Economics and Entrepreneurship	3	0	0	3	3
2	PCCH-611	Chemical Reaction Engineering - I	3	1	0	4	4
3	PCCH-612	Mass Transfer - II	3	0	0	3	3
4	OE##-611	Open Elective-1	3	0	0	3	3
5	OE##-612	Open Elective-2	3	0	0	3	3
6	PECH-611	Professional Elective-1	3	0	0	3	3
7	PCCH-613	Reaction Engineering Lab	0	0	2	2	1
		Total					20
8**	HDCH-611	Process Equipment Design	2	2	0	4	4
9**	HDCH-612	Optimization of Chemical Processes	3	1	0	4	4
10*	MDCH-611	Chemical Reaction Engineering	3	0	0	3	3
	MDCH-612	Chemical Reaction Engineering Lab	0	0	2	2	1

Semester-V B

1	EAA-611+	Fractional credit course/Extra Academic Activity +GROUP A/B/C					1 (S/US)
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Semester-VI A

S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	HSMC-601	Technical communication	2	0	0	2	2
2	PCCH-621	Transport Phenomena	3	1	0	4	4
3	PCCH-622	Chemical Reaction Engineering - II	3	0	0	3	3
4	OE##-621	Open Elective-3	3	0	0	3	3
5	OE##-622	Open Elective-4	3	0	0	3	3
6	PECH-621	Professional Elective-II	3	0	0	3	3
7	PCCH-623	Design and simulation lab	0	0	2	2	1
8	HSMC-602	Technical communication lab	0	0	2	2	1
		Total					20
9**	HDCH-621	Process Integration	3	1	0	4	4
10*	MDCH-621	Mass Transfer	3	1	0	4	4

Semester-VI B

1	TPID-621	Industrial Training 04 weeks				160	3 (S/US)
2	EAA-621+	Fractional credit course/Extra Academic Activity +GROUP A/B/C					1 (S/US)

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Semester-VII							
S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	PCCH-711	Chemical Process Industries	3	0	0	3	3
2	PCCH-712	Process Instrumentation and Control	3	1	0	4	4
3	OE##-711	Open Elective-5	3	0	0	3	3
4	PECH-711	Professional Elective- III	3	1	0	4	4
5	PECH-712	Professional Elective -IV	3	0	0	3	3
6	PCCH-713	Process Instrumentation and Control lab	0	0	2	2	1
7	PR##-711	Project stage 1 and seminar	0	0	4	4	2
		Total					20
8**	HDCH-711	Computational Transport Phenomena	3	1	0	4	4
9*	MDCH-711	Process Equipment Design	3	1	0	4	4
Semester-VIII							
S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	PECH-721	Professional Elective	3	0	0	3	3
2	PECH-722	Professional Elective	3	0	0	3	3
3	PRCH-721	Project Stage II	0	0	12	12	6
4	PHCH-721	Project Hons	0	0	08	08	4
		Total	6	0	20	26	16
OR							
S No	Sub Code	Subject Name	L	T	P	Hrs.	Credits
1	INID-721	Internship in Industry					6
2	PRCH-721	Project Stage II	0	0	12	12	6
3	PHCH-721	Project Hons	0	0	08	08	4
		Total					16

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<u>LIST OF OPEN ELECTIVES</u>							
S. No	Sub. Code	Subject Name	L	T	P	Hrs.	Credits
1		Open Elective-I	3	0	0	3	3
	OECH-611A	Fuel Cells	3	0	0	3	3
	OECH-611B	Analytical Methods and Instrumentation	3	0	0	3	3
2		Open Elective-II	3	0	0	3	3
	OECH-612A	Electrochemical Engineering	3	0	0	3	3
	OECH-612B	Renewable Energy Sources	3	0	0	3	3
3		Open Elective-III	3	0	0	3	3
	OECH-621A	Agro Residue Utilization	3	0	0	3	3
	OECH-621B	Corrosion Engineering	3	0	0	3	3
4		Open Elective-IV	3	0	0	3	3
	OECH-622A	Industrial Pollution Control	3	0	0	3	3
	OECH-622B	Energy Audit and Management	3	0	0	3	3
5		Open Elective-V	3	0	0	3	3
	OECH-711A	Optimization Techniques for Engineers	3	0	0	3	3
	OECH-711B	Polymer Technology	3	0	0	3	3
	OECH-711C	Paper Technology	3	0	0	3	3

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	PECH-721C	Chemical Plant Utilities and Safety	3	0	0	3	3
	PECH-721D	Pharmaceutical Formulation	3	0	0	3	3
	PECH-721E	Fertilizer Technology	3	0	0	3	3
	PECH-721F	Hazardous Waste Management	3	0	0	3	3
6		Professional Elective-VI					
	PECH-722A	Chemical Recovery Processes in Pulp And Paper Industry	3	0	0	3	3
	PECH-722B	Rubber Technology	3	0	0	3	3
	PECH-722C	Advance Process Control	3	0	0	3	3
	PECH-722D	Combustion Technology	3	0	0	3	3
	PECH-722E	Environmental Impact Assessment	3	0	0	3	3

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<u>LIST OF SUBJECTS FOR HONORS DEGREE</u>							
Sr.No	Sub. Code	Subject Name	L	T	P	Hrs.	Credits
1.	HDCH-611	Process Equipment Design	2	2	0	4	4
2.	HDCH-612	Optimization of Chemical Processes	3	1	0	4	4
3.	HDCH-621	Process Integration	3	1	0	4	4
4.	HDCH-711	Computational Transport Phenomena	3	1	0	4	4

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