Semester-wise Course Structure
(w.e.f. 2025-26)
(Program: B.Tech. in Chemical Engineering Major)
Batch: 2025-2029

Semester 1 (1 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
PY111	IS	Classical Physics	3	1	0	11
CY111	IS	Inorganic & Physical Chemistry	3	1	0	11
MA123	IS	Applied Mathematics-1	3	1	0	11
CH161	IE	Engineering Thermodynamics	3	1	0	11
PY111L	IS	Physics Lab	0	0	2/2	1
CY111L	IS	Chemistry Lab	0	0	2/2	1
ME131	EP	Workshop Practices	0	0	3	3
		Total Credits				**49**
HU101	HU	Universal Human Values	1	1	0	5
LM101*	LM	Basic English	1	2	0	7

*Basic English to be taken by a student by recommendation after Diagnostic Test

Semester 2 (1 Year: Even Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
PY121	IS	Modern Physics	2	1	0	8
CY121	IS	Organic and Hydrocarbon Chemistry	3	1	0	11
MA124	IS	Applied Mathematics-2	3	1	0	11
CS101	IE	Computer Programing	3	1	0	11
CH121	IE	Fluid Mechanics	3	1	0	11
PY121L	IS	Physics Lab	0	0	2/2	1
CY121L	IS	Chemistry Lab	0	0	2/2	1
CS101L	IE	Computer Programing Lab	0	0	2	2
CH111	EP	Chemical Engineering Practices	1	0	2	5
ME121	EP	Engineering Graphics	0	0	3	3
		Total Credits				**64**
HU102	HU	Community Internship	1	1	0	5

Semester: Summer Term (1st Year, after 2nd sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH217	DP	Summer Internship (2 Weeks)	0	0	14	2
		Total Credits				**2**

Semester 3 (2 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
MA222	IS	Applied Mathematics-3	3	1	0	11
ECE102	IE	Fundamentals of Electronics Engineering	3	1	0	11
CH262	DC	Chemical Engineering Thermodynamics	3	1	0	11
CH171	DC	Mass & Energy Balances	2	1	0	8
CH224	DC	Fluid Flow and Mechanical Operations	3	1	0	11
CH223L	DC	Fluid Flow and Mechanical Operations Lab	0	0	2	2
ECE102L	IE	Fundamentals of Electronics Engineering Lab	0	0	2	2
		Total Credits				**56**

Semester 4 (2 Year: Even sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH212	DC	Materials Science and Strength of Materials	3	1	0	11
CH274	DC	Mass Transfer Operations-1	3	1	0	11
CH281	DE 1	Petroleum Refining Engineering	3	0	0	9
CH231	DC	Heat Transfer Operations	3	1	0	11
CH251	DC	Chemical Reaction Engineering-1	2	1	0	8
PC101	LM	Professional Communication	2	1	0	8
CH251L	DC	Chemical Reaction Engineering Lab	0	0	2	2
CH231L	DC	Heat Transfer Operation Lab	0	0	2	2
		Total Credits				**62**

Semester: Summer Term (2nd Year, after 4nd sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH317	DP	Summer Internship (4 Weeks)	0	0	11	3
		Total Credits				**3**

Semester 5 (3 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH375	DC	Mass Transfer Operations-2	3	1	0	11
CH352	DC	Chemical Reaction Engineering-2	2	1	0	8
CH392	DC	Chemical Process Technology	3	0	0	9
CH414	DC	Process Equipment Design	2	0	0	6
CH382	DE 2	Refinery Process Design	3	0	0	9
CH341	DC	Process Dynamics and Control	3	1	0	11
CH274L	DC	Mass Transfer Operation Lab	0	0	2	2
CH341L	DC	Process Dynamics and Control Lab	0	0	2	2
CH414P	DC	Process Equipment Design Project	0	0	2	2
		Total Credits				**60**

Semester 6 (3 Year: Even sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH301	DC	Process Instrumentation	2	0	0	6
CH313	DC	Equipment Design: Mechanical Aspects	2	0	0	6
CH413	DC	Plant Design and Economics	3	0	0	9
CH202	DC	Corrosion Engineering	2	0	0	6
CH481	DE 3	Natural Gas Processing	3	0	0	9
CH413	DC	Plant Design and Economics Lab	0	0	2	2
CH543	DE 4	Fluidization Engineering	3	0	0	9
						47

Semester: Summer Term (3rd Year, after 6th sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH417	DP	Summer Internship (6 Weeks)	0	0	12	5
		Total Credits				**5**

Semester 7 (4 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
	OE1	Open Elective 1	3	0	0	9
	OE2	Open Elective 2	3	0	0	9
HU331	HU	Organizational Psychology	2	0	0	6
MT5405	LM	Foundations of Management	2	0	0	6
HU313	HU	Sociology of Industry and Work Culture	2	0	0	6
MT5100	LM	Principles of Economics	2	0	0	6
		Total Credits				**42**
	EP	Seminar / CDC Course1	0	0	2	2
	EP	Group Discussion	0	0	2	2

Semester 8 (4 Year: Even sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH418	DP	B.Tech. Project	0	0	40	40
		Total Credits				**40**

Department Electives (DE)

Course Code	Course Category	Course Title	L	T	P	Credit
CH281	DE 1	Petroleum Refining Engineering	3	0	0	9
CH382	DE 2	Refinery Process Design	3	0	0	9
CH381	DE 2	Lube Base Oil & Wax Processing	3	0	0	9
CH471	DE 3	Multicomponent Distillation	3	0	0	9
CH383	DE 3	Thermal and Catalytic Cracking	3	0	0	9
CH201	DE 4	Fire, Safety and Hazard Analysis	2	0	0	6
CH443	DE 4	Modelling Simulation and Optimization	2	0	2	8
CH401	DE 4	Transport Phenomenon	2	0	0	6
CH402	DE 4	Industrial Pollution and Control	2	0	2	8

Component Distribution of Credits (B.Tech. in Chemical Engineering Major)
Batch: 2024-2028

Category	Programme component	Existing Credits		Recommended Allocation
		Min	**Max**	
HU	Humanities & Social Science	22	22	22
IS	Science	70	90	78
IE	Institute Engineering	40	70	48
EP	Engineering Drawing, Workshop, Internship, Engg Practices	18	24	15
LM	Language & Management	18	24	20
DC	Departmental Core	145	190	157
DE	Departmental Elective	30	75	36
OE	Open Elective	15	20	18
DP	Project/Industrial Visit	20	50	50
	TOTAL	**378**	**565**	**444**

Humanities & Social Science (HU)

Humanities & Social Science	L	T	P	Credits
Universal Human Values	1	1	0	5
Community Internship	1	1	0	5
Organizational Psychology	2	0	0	6
Sociology of Industry and Work Culture	2	0	0	6
				22

Institute Science (IS)

Science	L	T	P	Credits
Classical Physics	3	1	0	11
Organic and Hydrocarbon Chemistry	3	1	0	11
Applied Mathematics-1	3	1	0	11
Physics Lab	0	0	2/2	1
Chemistry lab	0	0	2/2	1
Modern Physics	2	1	0	8
Inorganic & Physical Chemistry	3	1	0	11
Applied Mathematics-2	3	1	0	11
Physics Lab	0	0	2/2	1
Chemistry lab	0	0	2/2	1
Applied Mathematics-3	3	1	0	11
				78

Institute Engineering (IE)

Institute Engineering	L	T	P	Credits
Engineering Thermodynamics	3	1	0	11
Computer Programing	3	1	0	11
Fluid Mechanics	3	1	0	11
Computer Programing Lab	0	0	2	2
Fundamentals of Electronics Engg	3	1	0	11
Fundamentals of Electronics Engg Lab	0	0	2	2
				48

Engineering Drawing, Workshop, Internship, Engg Practices (EP)

Engineering Drawing etc	L	T	P	Credits
Workshop Practices	0	0	3	3
Engineering Graphics	0	0	3	3
Group Discussion	0	0	2	2
Seminar	0	0	2	2
Chemical Engineering Practices	1	0	2	5
				15

Language & Management (LM)

Language & Management	L	T	P	Credits
Professional Communication	2	1	0	8
Foundations of Management	2	0	0	6
Principles of Economics	2	0	0	6
				20

Departmental Elective (DE)

Departmental Elective	L	T	P	Credits
DE 1: Petroleum Refining Engineering	3	0	0	9
DE 2: Refinery Process Design	3	0	0	9
DE 3: Natural Gas Processing	3	0	0	9
DE 4: Fluidization Engineering	3	0	0	9
				36

Open Elective (OE)

Open Elective	L	T	P	Credits
Open Elective-1	3	0	0	9
Open Elective-2	3	0	0	9
				18

Project/Industrial Visit (DP)

Project/Industrial Visit	L	T	P	Credits
B.Tech. Project	0	0	40	40
Internship	0	0	10	10
				50

Departmental Core (DC)

Departmental Core	L	T	P	Credits
Chemical Engineering Thermodynamics	3	1	0	11
Mass & Energy Balances	2	1	0	8
Fluid Flow and Mechanical Operations	3	1	0	11
Fluid Flow and Mechanical Operations Lab	0	0	2	2
Materials Science and Strength of Materials	3	0	0	9
Mass Transfer Operations-1	3	1	0	11
Heat Transfer Operations	3	1	0	11
Chemical Reaction Engineering-1	2	1	0	8
Chemical Reaction Engineering Lab	0	0	2	2
Heat Transfer Operation Lab	0	0	2	2
Mass Transfer Operations-2	3	1	0	11
Chemical Reaction Engineering-2	2	1	0	8
Chemical Process Technology	2	0	0	9
Equipment Design: Mechanical Aspects	2	0	0	6
Process Dynamics and Control	3	1	0	11
Process Dynamics and Control Lab	0	0	2	2
Mass Transfer Operation Lab	0	0	2	2
Process Instrumentation	2	0	0	6
Process Equipment Design	2	0	0	6
Plant Design and Economics	3	0	0	9
Corrosion Engineering	2	0	0	6
Process Equipment Design Project	0	0	2	2
Plant Design and Economics Lab	0	0	2	2
				157

Semester-wise Course Structure
(w.e.f. 2025-26)
(Program: B.Tech. in Chemical Engineering: Major in Renewable Energy Engineering)
Batch: 2025-2029

Semester 1 (1 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
PY111	IS	Classical Physics	3	1	0	11
CY121	IS	Inorganic & Physical Chemistry	3	1	0	11
MA123	IS	Applied Mathematics-1	3	1	0	11
CH161	IE	Engineering Thermodynamics	3	1	0	11
PY111L	IS	Physics Lab	0	0	2/2	1
CY111L	IS	Chemistry Lab	0	0	2/2	1
ME131	EP	Workshop Practices	0	0	3	3
		Total Credits				**49**
HU101	HU	Universal Human Values	1	1	0	5
LM101*	LM	Basic English	1	2	0	7

*Basic English to be taken by a student by recommendation after Diagnostic Test

Semester 2 (1 Year: Even sem)

Course Code	Course Category	Course Title	L	T	P	Credit
PY121	IS	Modern Physics	2	1	0	8
CY111	IS	Organic and Hydrocarbon Chemistry	3	1	0	11
MA124	IS	Applied Mathematics-2	3	1	0	11
CS101	IE	Computer Programing	3	1	0	11
CH121	IE	Fluid Mechanics	3	1	0	11
PY121L	IS	Physics Lab	0	0	2/2	1
CY121L	IS	Chemistry Lab	0	0	2/2	1
CS101L	IE	Computer Programing Lab	0	0	2	2
CH112	EP	Renewable Energy Engineering Practices	1	0	2	5
ME121	EP	Engineering Graphics	0	0	3	3
		Total Credits				**64**
HU102	HU	Community Internship	1	1	0	5

Semester: Summer Term (1st Year, after 2nd sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH217	DP	Summer Internship (2 Weeks)	0	0	14	2
		Total Credits				**2**

Semester 3 (2 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
MA222	IS	Applied Mathematics-3	3	1	0	11
ECE102	IE	Fundamentals of Electronics Engineering	3	1	0	11
CH262	DC	Chemical Engineering Thermodynamics	3	1	0	11
CH171	DC	Mass & Energy Balances	2	1	0	8
CH224	DC	Fluid Flow and Mechanical Operations	3	1	0	11
CH224L	DC	Fluid Flow and Mechanical Operations Lab	0	0	2	2
ECE102L	IE	Fundamentals of Electronics Engineering Lab	0	0	2	2
		Total Credits				**56**

Semester 4 (2 Year: Even sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH212	DC	Materials Science and Strength of Materials	3	1	0	11
CH274	DC	Mass Transfer Operations-1	3	1	0	11
	IE	Fundamental of Electrical Engineering	3	0	0	9
CH281	DE 1	Petroleum Refining Engineering	3	0	0	9
CH231	DC	Heat Transfer Operations	3	1	0	11
CH251	DC	Chemical Reaction Engineering-1	2	1	0	8
PC101	LM	Professional Communication	2	1	0	8
CH251L	DC	Chemical Reaction Engineering Lab	0	0	2	2
CH231	DC	Heat Transfer Operation Lab	0	0	2	2
		Total Credits				**71**

Semester: Summer Term (2nd Year, after 4nd sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH415	DP	Summer Internship (4 Weeks)	0	0	11	3
		Total Credits				**3**

Semester 5 (3 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH375	DC	Mass Transfer Operations-2	3	1	0	11
CH352	DC	Chemical Reaction Engineering-2	2	1	0	8
CH392	DC	Chemical Process Technology	3	0	0	9
CH414	DC	Process Equipment Design	2	0	0	6
CH203	DE 2	Energy Resources & Utilization	2	0	0	6
CH341	DC	Process Dynamics and Control	3	1	0	11
CH274L	DC	Mass Transfer Operation Lab	3	0	2	2
CH203L	DE 2	Energy Resources & Utilization Lab	0	0	2	2
CH341L	DC	Process Dynamics and Control Lab	0	0	2	2
CH414P	DC	Process Equipment Design Project	0	0	2	2
		Total Credits				**59**

Semester 6 (3 Year: Even Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH301	DC	Process Instrumentation	2	0	0	6
CH313	DC	Equipment Design: Mechanical Aspects	2	0	0	6
CH413	DC	Plant Design and Economics	3	0	0	9
CH451	DE 3	Electrochemical Processes and Energy Systems	3	0	0	9
CH202	DC	Corrosion Engineering	2	0	0	6
CH504	DE 4	Hydrogen Energy	3	0	0	9
CH508L	DC	Energy Conversion Lab	0	0	2	2
						47

Semester: Summer Term (3rd Year, after 6th Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH417	DP	Summer Internship (6 Weeks)	0	0	12	5
		Total Credits				**5**

Semester 7 (4 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
	OE 1	Open Elective 1	3	0	0	9
	OE 2	Open Elective 2	3	0	0	9
HU331	HU	Organizational Psychology	2	0	0	6
MT5405	LM	Foundations of Management (LM)	2	0	0	6
HU313	HU	Sociology of Industry and Work Culture	2	0	0	6
MT5100	LM	Principles of Economics	2	0	0	6
		Total Credits				**42**
	EP	Seminar / CDC Course	0	0	2	2
	EP	Group Discussion	0	0	2	2

Semester 8 (4 Year: Even sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH418	DP	B.Tech. Project	0	0	40	40
		Total Credits				**40**

Department Electives (DE)

Course Code	Course Category	Course Title	L	T	P	Credit
CH281	DE 1	Petroleum Refining Engineering	3	0	0	9
CH203 (+L)	DE 2	Energy Resources & Utilization (+Lab)	2	0	2	8
CH302	DE 3	Biomass and Biofuels Engineering	3	0	0	9
CH554	DE 3	Fuel Cell Technology	3	0	0	9
CH201	DE 4	Fire, Safety and Hazard Analysis	2	0	0	6
CH443	DE 4	Modelling Simulation and Optimization	2	0	2	8
CH401	DE 4	Transport Phenomenon	2	0	0	6
CH402	DE 4	Industrial Pollution and Control	2	0	2	8
CH555	DE 4	Solar Energy Technology	3	0	0	9
CH504	DE 4	Hydrogen Energy	3	0	0	9
CH405	DE 4	Biochemical Engineering	2	0	0	6
CH556	DE 4	Photovoltaics	3	0	0	9

Component Distribution of Credits
(B.Tech. in Chemical Engineering: Major in Renewable Energy Engineering)
Batch: 2025-2029

Category	Programme component	Existing Credits		Recommended Allocation
		Min	Max	
HU	Humanities & Social Science	22	22	22
IS	Science	70	90	78
IE	Institute Engineering	40	70	57
EP	Engineering Drawing, Workshop, Internship, Engg Practices	18	24	15
LM	Language & Management	18	24	20
DC	Departmental Core	145	190	157
DE	Departmental Elective	30	75	35
OE	Open Elective	15	20	18
DP	Project/Industrial Visit	20	50	50
	TOTAL	**378**	**565**	**452**

Humanities & Social Science (HU)

Humanities & Social Science	L	T	P	Credits
Universal Human Values	1	1	0	5
Community Internship	1	1	0	5
Organizational Psychology	2	0	0	6
Sociology of Industry and Work Culture	2	0	0	6
				22

Institute Science (IS)

Science	L	T	P	Credits
Classical Physics	3	1	0	11
Organic and Hydrocarbon Chemistry	3	1	0	11
Applied Mathematics-1	3	1	0	11
Physics Lab	0	0	2/2	1
Chemistry lab	0	0	2/2	1
Modern Physics	2	1	0	8
Inorganic & Physical Chemistry	3	1	0	11
Applied Mathematics-2	3	1	0	11
Physics Lab	0	0	2/2	1
Chemistry lab	0	0	2/2	1
Applied Mathematics-3	3	1	0	11
				78

Institute Engineering (IE)

Institute Engineering	L	T	P	Credits
Engineering Thermodynamics	3	1	0	11
Computer Programing	3	1	0	11
Fluid Mechanics	3	1	0	11
Computer Programing Lab	0	0	2	2
Fundamentals of Electronics Engg	3	1	0	11
Fundamentals of Electronics Engg Lab	0	0	2	2
Fundamental of Electrical Engineering	3	0	0	9
				57

Engineering Drawing, Workshop, Internship, Engg Practices (EP)

Engineering Drawing etc	L	T	P	Credits
Workshop Practices	0	0	3	3
Engineering Graphics	0	0	3	3
Renewable Energy Engineering Practices	1	0	2	5
Seminar	0	0	2	2
Group discussion	0	0	2	3
				15

Language & Management (LM)

Language & Management	L	T	P	Credits
Professional Communication	2	1	0	8
Foundations of Management	2	0	0	6
Principles of Economics	2	0	0	6
				20

Departmental Elective (DE)

Departmental Elective	L	T	P	Credits
DE-1: Petroleum Refining Engineering	3	0	0	9
DE 2: Energy Resources and Utilization	2	0	0	6
Energy Resources and Utilization Lab	0	0	2	2
DE3: Electrochemical Processes and Energy Systems	3	0	0	9
DE4: Hydrogen Energy	3	0	0	9
				35

Open Elective (OE)

Open Elective	L	T	P	Credits
Open Elective-1 (Digital Technology)	3	0	0	9
Open Elective-2 (Sustainability and Climate Change)	3	0	0	9
				18

Project/Industrial Visit (DP)

Project/Industrial Visit	L	T	P	Credits
B.Tech. Project	0	0	40	40
Internship				8
				48

Departmental Core (DC)

Departmental Core	L	T	P	Credits
Chemical Engineering Thermodynamics	3	1	0	11
Mass & Energy Balances	2	1	0	8
Fluid Flow and Mechanical Operations	3	1	0	11
Fluid Flow and Mechanical Operations Lab	0	0	2	2
Materials Science and Strength of Materials	3	0	0	9
Mass Transfer Operations-1	3	1	0	11
Heat Transfer Operations	3	1	0	11
Chemical Reaction Engineering-1	2	1	0	8
Chemical Reaction Engineering Lab	0	0	2	2
Heat Transfer Operation Lab	0	0	2	2
Mass Transfer Operations-2	3	1	0	11
Chemical Reaction Engineering-2	2	1	0	8
Chemical Process Technology	3	0	0	9
Equipment Design: Mechanical Aspects	2	0	0	6
Process Dynamics and Control	3	1	0	11
Process Dynamics and Control Lab	0	0	2	2
Mass Transfer Operation Lab	0	0	2	2
Process Instrumentation	2	0	0	6
Process Equipment Design	2	0	0	6
Plant Design and Economics	3	0	0	9
Corrosion Engineering	2	0	0	6
Process Equipment Design Project	0	0	2	2
Energy Conversion Lab	0	0	2	2
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Semester-wise Course Structure
(w.e.f. 2025-26)
(Program: B.Tech. in Chemical Engineering: Major in Petrochemicals & Polymer Engineering)
Batch: 2025-2029

Semester 1 (1 Year: Odd Sem)

Course Code	Course Category	Course Title	L	T	P	Credit
PY111	IS	Classical Physics	3	1	0	11
CY121	IS	Inorganic & Physical Chemistry	3	1	0	11
MA123	IS	Applied Mathematics-1	3	1	0	11
CH161	IE	Engineering Thermodynamics	3	1	0	11
PY111L	IS	Physics Lab	0	0	2/2	1
CY111L	IS	Chemistry Lab	0	0	2/2	1
ME131	EP	Workshop Practices	0	0	3	3
		Total Credits				**49**
HU101	HU	Universal Human Values	1	1	0	5
LM101*	LM	Basic English	1	2	0	7

*Basic English to be taken by a student by recommendation after Diagnostic Test

Semester 2 (1 Year: Even sem)

PY121	IS	Modern Physics	2	1	0	8
CY111	IS	Organic and Hydrocarbon Chemistry	3	1	0	11
MA124	IS	Applied Mathematics-2	3	1	0	11
CS101	IE	Computer Programing	3	1	0	11
CH121	IE	Fluid Mechanics	3	1	0	11
PY121L	IS	Physics Lab	0	0	2/2	1
CY121L	IS	Chemistry Lab	0	0	2/2	1
CS101L	IE	Computer Programing Lab	0	0	2	2
CH113	EP	Petrochemicals & Polymer Engineering Practices	1	0	2	5
ME121	EP	Engineering Graphics	0	0	3	3
		Total Credits				**64**
HU102	HU	Community Internship	1	1	0	5

Semester: Summer Term (1st Year, after 2nd sem)

Course Code	Course Category	Course Title	L	T	P	Credit
CH217	DP	Summer Internship (2 Weeks)	0	0	14	2
		Total Credits				**2**

Semester 3 (2 Year: Odd Sem)

MA222	IS	Applied Mathematics-3	3	1	0	11
ECE102	IE	Fundamentals of Electronics Engineering	3	1	0	11
CH262	DC	Chemical Engineering Thermodynamics	3	1	0	11
CH171	DC	Mass & Energy Balances	2	1	0	8
CH224	DC	Fluid Flow and Mechanical Operations	3	1	0	11
CH224L	DC	Fluid Flow and Mechanical Operations Lab	0	0	2	2
ECE102L	IE	Fundamentals of Electronics Engineering Lab	0	0	2	2
		Total Credits				**56**

Semester 4 (2 Year: Even sem)

CH212	DC	Materials Science and Strength of Materials	3	0	0	9
CH274	DC	Mass Transfer Operations-1	3	1	0	11
CH281	DC	Petroleum Refining Engineering	3	0	0	9
CH191	DE1	Fundamentals of Polymer & Petrochemicals	2	0	0	6
CH231	DC	Heat Transfer Operations	3	1	0	11
CH251	DC	Chemical Reaction Engineering-1	2	1	0	8
PC101	LM	Professional Communication	2	1	0	8
CH251L	DC	Chemical Reaction Engineering Lab	0	0	2	2
CH231L	DC	Heat Transfer Operation Lab	0	0	2	2
		Total Credits				**68**

Semester: Summer Term (2nd Year, after 4nd sem)

CH317	DP	Summer Internship (4 Weeks)	0	0	11	3
		Total Credits				**3**

Semester 5 (3 Year: Odd Sem)

CH375	DC	Mass Transfer Operations-2	3	1	0	11
CH352	DC	Chemical Reaction Engineering-2	2	1	0	8
CH395	DC	Chemical Process Technology	3	0	0	9
CH414	DC	Process Equipment Design	2	0	0	6
CH591	DE2	Petrochemical Process Technology	2	0	0	6
CH341	DC	Process Dynamics and Control	3	1	0	11
CH274L	DC	Mass Transfer Operation Lab	3	0	2	2
CH341L	DE	Process Dynamics and Control Lab	0	0	2	2
CH591L	DE	Petrochemicals Lab	0	0	2	2
CH414P	DC	Process Equipment Design Project	0	0	2	2
		Total Credits				**59**

Semester 6 (3 Year: Even sem)

CH301	DC	Process Instrumentation	2	0	0	6
CH313	DC	Equipment Design: Mechanical Aspects	2	0	0	6
CH413	DC	Plant Design and Economics	3	0	0	9
CH202	DC	Corrosion Engineering	2	0	0	6
CH391	DE3	Polymer Synthesis & Properties	2	1	0	8
CH393	DE4	Polymer Processing	2	0	0	6
CH391L	DC	Polymers Lab	0	0	2	2
CH413L	DC	Plant Design and Economics Lab	0	0	2	2
		Total Credits				**43**

Semester: Summer Term (3rd Year, after 6th sem)

CH417	DP	Summer Internship (6 Weeks)	0	0	12	5
		Total Credits				**5**

Semester 7 (4 Year: Odd Sem)

	OE	Open Elective-1	3	0	0	9
	OE	Open Elective-2	3	0	0	9
HU331	HU	Organizational Psychology (HU)	2	0	0	6
MT5405	LM	Foundations of Management (LM)	2	0	0	6
HU313	HU	Sociology of Industry and Work Culture	2	0	0	6
MT5100	LM	Principles of Economics	2	0	0	6
		Total Credits				**42**
	EP	Seminar / CDC Course	0	0	2	2
	EP	Group Discussion	0	0	2	2

Semester 8 (4 Year: Even sem)

CH418	DP	B.Tech. Project	0	0	40	40
		Total Credits				**40**

Department Electives (DE)

CH191	DE1	Fundamentals of Polymer & Petrochemicals	2	0	0	6
CH509	DE 2	Non-Conventional Hydrocarbon Sources	2	0	0	6
CH481	DE 3	Natural Gas Processing	3	0	0	9
	DE 3	Polymer Reaction Engineering	3	0	0	9
CH491	DE 4	Polymer Composites	3	0	2	9
CH522	DE 4	Polymer Rheology	3	0	0	9
CH201	DE 4	Fire, Safety and Hazard Analysis	2	0	0	6
CH443	DE 4	Modelling Simulation and Optimization	2	0	2	8
CH401	DE 4	Transport Phenomenon	2	0	0	6
CH402	DE 4	Industrial Pollution and Control	2	0	2	8

Component Distribution of Credits (B.Tech. in Chemical Engineering: Major in Petrochemicals & Polymer Engineering)
Batch: 2024-2028

Category	Programme component	Existing Credits		Recommended Allocation
		Min	**Max**	
HU	Humanities & Social Science	22	22	22
IS	Science	70	90	78
IE	Institute Engineering	40	70	48
EP	Engineering Drawing, Workshop, Internship, Engg Practices	18	24	15
LM	Language & Management	18	24	20
DC	Departmental Core	145	190	156
DE	Departmental Elective	30	75	30
OE	Open Elective	15	20	18
DP	Project/Industrial Visit	20	50	48
	TOTAL	**378**	**565**	**443**

Humanities & Social Science (HU)

Humanities & Social Science	L	T	P	Credits
Universal Human Values	1	1	0	5
Community Internship	1	1	0	5
Organizational Psychology	2	0	0	6
Sociology of Industry and Work Culture	2	0	0	6
				22

Institute Science (IS)

Science	L	T	P	Credits
Classical Physics	3	1	0	11
Organic and Hydrocarbon Chemistry	3	1	0	11
Applied Mathematics-1	3	1	0	11
Physics Lab	0	0	2/2	1
Chemistry lab	0	0	2/2	1
Modern Physics	2	1	0	8
Inorganic & Physical Chemistry	3	1	0	11
Applied Mathematics-2	3	1	0	11
Physics Lab	0	0	2/2	1
Chemistry lab	0	0	2/2	1
Applied Mathematics-3	3	1	0	11
				78

Institute Engineering (IE)

Institute Engineering	L	T	P	Credits
Engineering Thermodynamics	3	1	0	11
Computer Programing	3	1	0	11
Fluid Mechanics	3	1	0	11
Computer Programing Lab	0	0	2	2
Fundamentals of Electronics Engg	3	1	0	11
Fundamentals of Electronics Engg Lab	0	0	2	2
				48

Engineering Drawing, Workshop, Internship, Engg Practices (EP)

Engineering Drawing etc	L	T	P	Credits
Workshop Practices	0	0	3	3
Engineering Graphics	0	0	3	3
Petrochemicals and Polymers Engineering Practices	1	0	2	5
Seminar	0	0	2	2
Group Discussion	0	0	2	2
				15

Language & Management (LM)*

Language & Management	L	T	P	Credits
Professional Communication	2	1	0	8
Foundations of Management	2	0	0	6
Principles of Economics	2	0	0	6
				20

Departmental Elective (DE)

Departmental Elective	L	T	P	Credits
DE-1: Fundamental of Polymer and Petrochemicals	2	0	0	6
DE2: Petrochemical Process Technology	2	0	0	6
Petrochemicals Lab	0	0	2	2
DE3: Polymer Synthesis and Properties	2	1	0	8
DE4: Polymer Processing	2	0	0	6
Polymers Lab	0	0	2	2
				30

Open Elective (OE)

Open Elective	L	T	P	Credits
Open Elective-1 (Digital Technology)	3	0	0	9
Open Elective-2 (Sustainability and Climate Change)	3	0	0	9
				18

Project/Industrial Visit (DP)

Project/Industrial Visit	L	T	P	Credits
B.Tech. Project	0	0	40	40
Internship				8
				48

Departmental Core (DC)

Departmental Core	L	T	P	Credits
Chemical Engineering Thermodynamics	3	1	0	11
Mass & Energy Balances	2	1	0	8
Fluid Flow and Mechanical Operations	3	1	0	11
Fluid Flow and Mechanical Operations Lab	0	0	2	2
Materials Science and Strength of Materials	3	0	0	9
Mass Transfer Operations-1	3	1	0	11
Petroleum Refining Engineering	3	0	0	9
Heat Transfer Operations	3	1	0	11
Chemical Reaction Engineering-1	2	1	0	8
Chemical Reaction Engineering Lab	0	0	2	2
Heat Transfer Operation Lab	0	0	2	2
Mass Transfer Operations-2	3	1	0	11
Chemical Reaction Engineering-2	2	1	0	8
Chemical Process Technology	3	0	0	9
Equipment Design: Mechanical Aspects	2	0	0	6
Process Dynamics and Control	3	1	0	11
Process Dynamics and Control Lab	0	0	2	2
Mass Transfer Operation Lab	0	0	2	2
Process Instrumentation	2	0	0	6
Process Equipment Design	2	0	0	6
Plant Design and Economics	3	0	0	9
Corrosion Engineering	2	0	0	6
Plant Design and Economics Lab	0	0	2	2
Process Equipment Design Project	0	0	2	2
				164