B.Tech in Chemical Engineering: Major in petrochemicals and polymers Engineering (2023-24 Batch)

1st Semester		Credit
Classical Physics (3 1 0)	IS	11
Organic Chemistry (2 1 0)		8
Applied Mathematics-1 (3 1 0)		11
Physics Lab (0 0 2/2)		1
Chemistry lab (0 0 2/2)		1
Engineering Thermodynamics (3 1 0)	IE	11
Workshop Practices (0 0 3)	EP	3
Credit		46
Universal Human Values (1 1 0)	HU	5
Total Credit		**51**
Basic English (1 2 0)	L	7

2nd Semester		Credit
Modern Physics (2 1 0)	IS	8
Inorganic & Physical Chemistry (2 1 0)		8
Applied Mathematics-2 (3 1 0)		11
Physics Lab (0 0 2/2)		1
Chemistry lab (0 0 2/2)		1
Computer Programing (3 1 0)	IE	11
Computer Programing Lab (0 0 2)		2
Fluid Mechanics (3 1 0)		11
Petrochemicals and Polymers Engineering Practices (1 0 2)	EP	5
Engineering Graphics (0 0 3)		3
Credit		**61**
Community Internship (1 1 0)	HU	5
Total Credit		**66**

3rd Semester			4th Semester		
Applied Mathematics-3 (3 1 0)	IS	11	Materials Science and Strength of Materials (3 0 0)	IE	9
Fundamentals of Electronics Engg (3 1 0)	IE	11	Mass Transfer Operations-1 (3 1 0)	DC	11
Fundamentals of Electronics Engg Lab (0 0 2)		2	Petroleum Refining Engineering (3 0 0)		9
Chemical Engineering Thermodynamics (3 1 0)	DC	11	Fundamental of Polymer and Petrochemicals (2 0 0)		6
Mass & Energy Balances (2 1 0)		8	Heat Transfer Operations (3 1 0)		11
Fluid Flow Operations (2 1 0)		8	Chemical Reaction Engineering-1 (2 1 0)		8
Solid Fluid Mechanics and Mechanical Operations (2 1 0)		8	Chemical Reaction Engineering Lab (0 0 2)		2
Fluid Flow Operations Lab (0 0 2)		2	Heat Transfer Operation Lab (0 0 2)		2
Professional Communication (2 1 0)	L	8	**Credit**		58
Total Credit		69	Group Discussions	EP	2
			Total Credit		**60**

5th Semester			6th Semester		
Mass Transfer Operations-2 (2 0 0)	DC	6	Process Dynamics and Control (3 1 0)	DC	11
Chemical Reaction Engineering-2 (2 1 0)		8	Plant Design and Economics (3 0 0)		9
Process Instrumentation (2 0 0)		6	Mass Transfer Operations-3 (2 0 0)		6
Polymer Physics (2 1 0)		8	Polymer Synthesis and Properties (2 1 0)		8
Chemical Process Technology-02 (2 0 0)		6	Corrosion Engineering (2 0 0)		6
Equipment Design: Mechanical Aspects (2 0 0)		6	Polymer Reaction Engineering (2 0 0)		6
Mass Transfer Operation Lab Lab (0 0 2)		2	Plant Design Lab (0 0 2)		2
Chemical Engineering Software Lab (0 0 2)		2	Process Dynamics and Control Lab (0 0 2)		2
Equipment Design: Mechanical Aspects Project (0 0 2)		2	Petrochemicals Lab (0 0 2)		2
Polymer Lab (0 0 2)		2	Natural Gas Processing DE2: (Polymer Composites / Non - Conventional Hydrocarbon Sources/)	DE	9
DE1: Petrochemicals Technology	DE	9	**Credit**		**61**
Credit		**57**			
Seminar	EP	2			
B.Tech Project	DP	5			
Total Credit		**64**			

Summer Internship	**10**

7th Semester			8th Semester		
Industrial Pollution and Control (2 0 0)	DC	6	Modelling Simulation and Optimization (2 0 0)	DC	6
Process Equipment Design (2 0 0)		6	Fire, Safety and Hazard Analysis (2 0 0)		6
Industrial Pollution and Control Lab (0 0 2)		2	Modelling Simulation and Optimization Lab		2
Process Equipment Design Project (0 0 2)		2	Petrochemical Derivatives DE4: (Gasification Technology/ Advance Polymer Engineering/ Petroleum Primary Processing Technology)	DE	9
Polymer Processing DE3: (Polymer Materials, Additives & Blending/ Petrochemical Unit Processes/)	DE	9	Open Elective-2	OE	9
Open Elective-1	OE	9	Sociology of Industry and Work Culture (2 0 0)	HU	6
Organizational Psychology (2 0 0)	HU	6	Principles of Economics (3 0 0)	M	9
Foundations of Management (3 0 0)	M	9	**Total Credit**		**47**
Total Credit		**49**			

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	Proposed B. Tech. Course Structure			
Category	**Programme Component**	**Without Minor**		
		Min	**Max**	**Recommended**
HU	Humanities and Social Science	22	22	22
IS	Science	70	90	72
IE	Institute Engineering	40	70	57
EP	Engineering Drawing, Workshop	18	24	15
L	Language and Management	18	24	26
DC	Departmental Core	145	190	216
DE	Departmental Elective	30	75	36
OE	Open Elective	15	20	18
DP	Project/Industrial Visit	20	50	20
	Total	**440**	**490**	482