

## **Semester-wise Course Structure**

**(w.e.f. 2025-26)**

**(Program: B. Tech. in Chemical Engineering Major)**

**Batch: 2024-28**

### **Semester 1 (1 Year: Odd Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Classical Physics (IS) (PY111)	3	1	0	11
Inorganic & Physical Chemistry (IS) (CY121)	3	1	0	11
Applied Mathematics-1 (IS) (MA123)	3	1	0	11
Engineering Thermodynamics (IE) (CH161)	3	1	0	11
Physics Lab (IS) (PY111L)	0	0	2/2	1
Chemistry Lab (IS) (CY111L)	0	0	2/2	1
Workshop Practices (EP) (ME131)	0	0	3	3
<b>Total Credits</b>				<b>49</b>
Universal Human Values (HU) (HU101)	1	1	0	5

### **Semester 2 (1 Year: Even Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Modern Physics (IS) (PY121)	2	1	0	8
Organic and Hydrocarbon Chemistry (IS) (CY111)	3	1	0	11
Applied Mathematics-2 (IS) (MA124)	3	1	0	11
Computer Programming (IE) (CS101)	3	1	0	11
Fluid Mechanics (IE) (CH121)	3	1	0	11
Physics Lab (IS) (PY121L)	0	0	2/2	1
Chemistry Lab (IS) (CY121L)	0	0	2/2	1
Computer Programming Lab (IE) (CS101L)	0	0	2	2
Chemical Engineering Practices (DC) (CH111)	1	0	2	5
Engineering Graphics (EP) (ME121)	0	0	3	3
<b>Total Credits</b>				<b>64</b>
Community Internship (HU) (HU102)	1	1	0	5

**Semester 3 (2<sup>nd</sup> Year: Odd Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Applied Mathematics-3 (IS) (MA222)	3	1	0	11
Fundamentals of Electronics Engineering (IE) (ECE102)	3	1	0	11
Chemical Engineering Thermodynamics (DC) (CH262)	3	1	0	11
Mass & Energy Balances (DC) (CH171)	2	1	0	8
Fluid Flow and Mechanical Operations (DC) (CH224)	3	1	0	11
Fluid Flow and Mechanical Operations Lab (DC) (CH223L)	0	0	2	2
Fundamentals of Electronics Engineering Lab (IE) (ECE102L)	0	0	2	2
<b>Total Credits</b>				<b>56</b>

**Semester 4 (2<sup>nd</sup> Year: Even Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Materials Science and Strength of Materials (DC) (CH212)	3	0	0	9
Mass Transfer Operations-1 (DC) (CH274)	3	1	0	11
DE-1: Petroleum Refining Engineering (DE) (CH281)	3	0	0	9
Heat Transfer Operations (DC) (CH231)	3	1	0	11
Chemical Reaction Engineering-1 (DC) (CH251)	2	1	0	8
Professional Communication (LM) (PC101)	2	1	0	8
Chemical Reaction Engineering Lab (DC) (CH251L)	0	0	2	2
Heat Transfer Operation Lab (DC) (CH231)	0	0	2	2
<b>Total Credits</b>				<b>60</b>

**Semester 5 (3<sup>rd</sup> Year: Odd Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Mass Transfer Operations-2 (DC) (CH375)	3	0	0	9
Chemical Reaction Engineering-2 (DC) (CH352)	2	1	0	8
Chemical Process Technology (DC) (CH392)	3	0	0	9
Equipment Design: Mechanical Aspects (DC) (CH313)	3	0	0	9
DE2: Refinery Process Design (DE) (CH382)	3	0	0	9
Process Dynamics and Control (DC) (CH341)	3	1	0	11
Mass Transfer Operation Lab (DC) (CH274L)	0	0	2	2
Process Dynamics and Control Lab (DC) (CH341L)	0	0	2	2
<b>Total Credits</b>				<b>59</b>

**Semester 6 (3<sup>rd</sup> Year: Even Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Process Instrumentation (DC) (CH301)	2	0	0	6
Process Equipment Design (DC) (CH414)	2	0	0	6
Plant Design and Economics (DC) (CH413)	3	0	0	9
Corrosion Engineering (DC) (CH202)	2	0	0	6
DE3: Natural Gas Processing (DE) (CH481)	3	0	0	9
Process Equipment Design Project (DC) (CH414P)	0	0	2	2
Plant Design and Economics Lab (DC) (CH413)	0	0	2	2
DE4: Fluidization Engineering (DE) (CH543)	3	0	0	9
<b>Total Credits</b>				<b>49</b>

**Semester: Summer Term (3<sup>rd</sup> Year, after 6<sup>th</sup> Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Summer Internship Project (DP) (CH417)	0	0	10	10
<b>Total Credits</b>				<b>10</b>

**Semester 7 (4<sup>th</sup> Year: Odd Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
Open Elective-1 (Digital Technology) (OE) (CS443)	3	0	0	9
Open Elective-2 (Sustainability and Climate Change) (OE) (MT5213)	3	0	0	9
Organizational Psychology (HU) (HU331)	2	0	0	6
Foundations of Management (LM) (MT5405)	3	0	0	6
Sociology of Industry and Work Culture (HU) (HU313)	2	0	0	6
Principles of Economics (LM) (MT5100)	3	0	0	6
<b>Total Credits</b>				<b>42</b>

**Semester 8 (4<sup>th</sup> Year: Even Sem)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
B.Tech. Project (DP) (CH418)	0	0	50	50
<b>Total Credits</b>				<b>50</b>

**Department Electives (DE)**

<b>Course/Subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
DE 2: Lube Base Oil & Wax Processing (CH381)	3	0	0	9
DE 3; Multicomponent Distillation (CH471)	3	0	0	9
DE 3: Thermal and Catalytic Cracking (CH383)	3	0	0	9
DE 4: Fire, Safety and Hazard Analysis (CH201)	2	0	0	6
DE 4: Modelling Simulation and Optimization (CH443)	2	0	2	8
DE 4: Transport Phenomenon (CH401)	2	0	0	6
DE 4: Industrial Pollution and Control (CH402)	2	0	2	8