



**Department of Chemical Engineering**  
**B.Tech Curriculum (2020 Onwards)**

Course No	SEM-1	Credits	Type
EP1108	Modern Physics	2	BS
CY1018	Environmental Chemistry	2	BS
MA1110	Calculus-I	1	BS
MA1220	Calculus-II	1	BS
ID1063	Introduction to programming	3	BE
CH10010	Introduction to Chemical Engineering	2	DC
CH10020	Applied Chemistry	2	BS
LAxxxxx	English Communication	2	SS
	<b>Total</b>	<b>15</b>	

Course No	SEM-III	Credits	Type
CH20010	Biological Engineering	3	DC
CH20020	Numerical Methods	3	DC
CH20030	Transport Phenomena	3	DC
CH20040	Chemical Engineering Thermodynamics	3	DC
CH20050	Applied Mathematics in Chemical Engineering	3	DC
LAxxxxx	LA/CA	3	LA/CA
	<b>Total</b>	<b>18</b>	

Course No	SEM-V	Credits	Type
CH30010	Mass Transfer – I	3	DC
CH30020	Mechanical Operations	3	DC
CH30030	Chemical Technology	2	DC
CH30040	Chemical Reaction Engineering-II	3	DC
CH30021	HT & FM Lab	2	DL
CHxxxxx	Dept Electives-I*	6	DE
	<b>Total</b>	<b>19</b>	

Course No.	SEM-II	Credits	Type
CYxxxxx	Chemistry Lab	2	BS
BTxxxxx	Life Science	1	BS
MA1140	Elementary Linear Algebra	1	BS
MA1150	Differential Equations	1	BS
CH10031	Applied Chemistry Lab	1	BS
ID1054	Digital Fabrication	2	BE
CH10030	Chemical Process Calculations	2	DC
CH10040	Thermodynamic Laws & Phase Transitions	3	BE
EM3020	Introduction to Entrepreneurship	1	SS
LAxxxxx	LA/CA	2	LA/CA
LAxxxxx	Personality Development	1	SS
	<b>Total</b>	<b>17</b>	

Course No	SEM-IV	Credits	Type
EP1031	Physics Lab	2	BS
ID1050	Intro to AI	1	BE
EE1102	Basic Electrical Engineering	3	BE
CH20060	Materials Science for Chemical Engineers	2	BE
CH20070	Chemical Reaction Engineering-I	3	DC
CH20080	Heat transfer	3	DC
CH20090	Fluid Mechanics	3	DC
LAxxxxx	LA/CA	2	LA/CA
	<b>Total</b>	<b>19</b>	

Course No	SEM-VI	Credits	Type
CH30050	Mass Transfer – II	2	DC
CH30060	Process Control	3	DC
CH30031	MUO and CRE Lab	2	DL
CHxxxxx	Dept Electives-II*/Internship	6	DE
	Free Electives-I#	4	FE
	<b>Total</b>	<b>17</b>	

Course No	SEM-VI	Credits	Type
CH40012	Process Design and Economics	3	DC
CH40011	Process Simulation Lab	2	DL
CH40021	MT and Control Lab	2	DL
CHxxxxx	Dept Electives-III*	2	DE
	Free Elective-II#	3	FE
	LA/CA	1	LA/CA
	<b>Total</b>	<b>13</b>	

Course No.	SEM-VIII	Credits	Type
CH40040	Process Intensification	1	DC
LAxxxxx	LA/CA	1	LA/CA
CHxxxxx	Dept Electives-IV*	4	DE
	Free Electives-III#	5	FE
	<b>Total</b>	<b>11</b>	

### Total Number of Credits : 129

\*Department electives: 6 credits of department electives can be earned by doing mini project (optional and only for those who are not undergoing internship)

#The electives and free elective credits indicated in each semester are only suggestions, the students are free to do these courses in other semesters.

### Course distribution

Course No	Basic Sciences (BS)	Credits	SEM
EP1108	Modern Physics	2	1
CY1017	Environmental Chemistry	2	1
MA1110	Calculus-I	1	1
MA1220	Calculus-II	1	1
CH10030	Applied Chemistry	2	1
CYxxxxx	Chemistry Lab	2	2
LAxxx	Life Science	1	2
MA1140	Elementary Linear Algebra	1	2
MA1150	Differential Equations	1	2
CH10031	Applied Chemistry Lab	1	2
EP1031	Physics Lab	2	4
	<b>Total</b>	<b>16</b>	

Course No	Liberal Arts/ Creative Arts (LA/CA)	Credits	SEM
LAxxxxx	LA/CA	2	2
LAxxxxx	LA/CA	3	3
LAxxxxx	LA/CA	2	4
LAxxxxx	LA/CA	1	7
LAxxxxx	LA/CA	1	8
	<b>Total</b>	<b>9</b>	

Course No.	Basic Engineering (BE)	Credits	SEM
ID1063	Introduction to programming	3	1
ID1054	Digital Fabrication	2	2
CH10040	Thermodynamic Laws & Phase Transitions	3	2
ID1050	Intro to AI& ML	1	4
EE1102	Basic Electrical Engineering	3	4
CH20060	Materials Science for Chemical Engineers	2	4
	<b>Total</b>	<b>14</b>	

Course No.	Soft Skill (SS)	Credits	SEM
LAxxxxx	English Communication	2	
	Introduction to Entrepreneurship	1	
LAxxxxx	Personality Development	1	
	<b>Total</b>	<b>4</b>	

Course No.	Free Elective (FE)	Credits	SEM
	Free Elective -1	4	6
	Free Elective-II	3	7
	Free Elective-III	5	8
	<b>Total</b>	<b>12</b>	

Course No	Department Core Courses (DC)	Credits	SEM
CH10010	Introduction to Chemical Engineering	2	1
CH10030	Chemical Process Calculations	2	2
CH20010	Biological Engineering	3	3
CH20020	Numerical Methods	3	3
CH20030	Transport Phenomena	3	3
CH20040	Chemical Engineering Thermodynamics	3	3
CH20050	Applied Mathematics in Chemical Engineering	3	3
CH20070	Chemical Reaction Engineering-I	3	4
CH20080	Heat transfer	3	4
CH20090	Fluid Mechanics	3	4
CH30010	Mass Transfer – I	3	5
CH30020	Mechanical Operations	3	5
CH30030	Chemical Technology	2	5
CH30040	Chemical Reaction Engineering-II	3	5
CH30050	Mass Transfer – II	2	6
CH30060	Process Control	3	6
CH40012	Process Design and Economics	3	7
CH40040	Process Intensification	1	8
	<b>Total</b>	<b>48</b>	

Overall Distribution	Credits	%
Department Core	48	37.2
Department Lab	8	6.2
Department Elective	18	14.0
Basic Science	16	12.4
Basic Engineering	14	10.9
Free Elective	12	9.3
LA/CA	9	7
Soft Skill	4	3

Course No.	Department Electives (DE)	Credits	SEM
CHxxxxx	Dept Electives-I	6	5
CHxxxxx	Dept Electives-II*/Internship	6	6
CHxxxxx	Dept Electives-III*	2	7
CHxxxxx	Dept Electives-IV*	4	8
	<b>Total</b>	<b>18</b>	

Course No.	Department Labs (DL)	Credits	SEM
CH30021	HT & FM Lab	2	5
CH30031	MUO and CRE Lab	2	6
CH40021	MT and Control Lab	2	7
CH40011	Process Simulation Lab	2	7
	<b>Total</b>	<b>8</b>	

