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

Course No	SEM-I	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
CH1010	Introduction to Chemical Engineering	2	DC
CH1020	Applied Chemistry	2	BS
LAxxxx	English Communication	2	SS
	Total	15	

Course No.	SEM-II	Credits	Type
CYxxxx	Chemistry Lab	2	BS
LAxxx	Life Science	1	BS
MA1140	Elementary Linear Algebra	1	BS
MA1150	Differential Equations	1	BS
CH1031	Applied Chemistry Lab	1	BS
ID1054	Digital Fabrication	2	BE
CH1030	Chemical Process Calculations	2	DC
CH1040	Thermodynamic Laws & Phase Transitions	3	BE
	Introduction to Entrepreneurship	1	SS
LAxxxx	LA/CA	2	LA/CA
LAxxxx	Personality Development	1	SS
	Total	17	

Course No	SEM-III	Credits	Type
CH2010	Biological Engineering	3	DC
CH2020	Numerical Methods	3	DC
CH2030	Transport Phenomena	3	DC
CH2040	Chemical Engineering Thermodynamics	3	DC
CH2050	Applied Mathematics in Chemical Engineering	3	DC
LAxxxx	LA/CA	3	LA/CA
	Total	18	

Course No	SEM-IV	Credits	Type
EP1031	Physics Lab	2	BS
ID1054	Intro to AI& ML	1	BE
EE1102	Basic Electrical Engineering	3	BE
CH2060	Materials Science for Chemical Engineers	2	BE
CH2070	Chemical Reaction Engineering-I	3	DC
CH2080	Heat transfer	3	DC
CH2090	Fluid Mechanics	3	DC
LAxxxx	LA/CA	2	LA/CA
	Total	19	

Course No	SEM-V	Credits	Type
CH3010	Mass Transfer – I	3	DC
CH3020	Mechanical Operations	3	DC
CH3030	Chemical Technology	2	DC
CH3040	Chemical Reaction Engineering-II	3	DC
CH3021	HT & FM Lab	2	DL
CHxxxx	Dept Electives-I*	6	DE
	Total	19	

Course No	SEM-VI	Credits	Type
CH3050	Mass Transfer – II	2	DC
CH3060	Process Control	3	DC
CH3031	MUO and CRE Lab	2	DL
CHxxxx	Dept Electives-II*/Internship	6	DE
	Free Electives-I#	4	FE
	Total	17	

Course No	SEM-VI	Credits	Type
CH4012	Process Design and Economics	3	DC
CH4011	Process Simulation Lab	2	DL
CH4021	MT and Control Lab	2	DL
CHxxxx	Dept Electives-III*	2	DE
	Free Elective-II#	3	FE
	LA/CA	1	LA/CA
	Total	13	

Course No.	SEM-VIII	Credits	Type
CH4040	Process Intensification	1	DC
LAxxxx	LA/CA	1	LA/CA
CHxxxx	Dept Electives-IV*	4	DE
	Free Electives-III#	5	FE
	Total	11	

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
CH1030	Applied Chemistry	2	1
CYxxxx	Chemistry Lab	2	2
LAxxx	Life Science	1	2
MA1140	Elementary Linear Algebra	1	2
MA1150	Differential Equations	1	2
CH1031	Applied Chemistry Lab	1	2
EP1031	Physics Lab	2	4
	Total	16	

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

Course No.	Basic Engineering (BE)	Credits	SEM
ID1063	Introduction to programming	3	1
ID1054	Digital Fabrication	2	2
CH1050	Thermodynamic Laws & Phase Transitions	3	2
ID1054	Intro to AI& ML	1	4
EE1102	Basic Electrical Engineering	3	4
CH3040	Materials Science for Chemical Engineers	2	4
	Total	14	

Course No.	Soft Skill (SS)	Credits	SEM
LAxxxx	English Communication	2	
	Introduction to Entrepreneurship	1	
LAxxxx	Personality Development	1	
	Total	4	

Course No.	Free Elective (FE)	Credits	SEM
	Free Elective -I	4	6
	Free Elective-II	3	7
	Free Elective-III	5	8
	Total	12	

Course No	Department Core Courses (DC)	Credits	SEM
CH1010	Introduction to Chemical Engineering	2	1
CH1030	Chemical Process Calculations	2	2
CH2010	Biological Engineering	3	3
CH2020	Numerical Methods	3	3
CH2030	Transport Phenomena	3	3
CH2040	Chemical Engineering Thermodynamics	3	3
CH2050	Applied Mathematics in Chemical Engineering	3	3
CH2070	Chemical Reaction Engineering-I	3	4
CH2090	Heat transfer	3	4
CH2090	Fluid Mechanics	3	4
CH3010	Mass Transfer – I	3	5
CH3020	Mechanical Operations	3	5
CH3030	Chemical Technology	2	5
CH3040	Chemical Reaction Engineering-II	3	5
CH3050	Mass Transfer – II	2	6
CH3060	Process Control	3	6
CH4012	Process Design and Economics	3	7
CH4040	Process Intensification	1	8
	Total	48	

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
CHxxxx	Dept Electives-I	6	5
CHxxxx	Dept Electives-II*/Internship	6	6
CHxxxx	Dept Electives-III*	2	7
CHxxxx	Dept Electives-IV*	4	8
	Total	18	

Course No.	Department Labs (DL)	Credits	SEM
CH3031	HT & FM Lab	2	5
CH3021	MUO and CRE Lab	2	6
CH4021	MT and Control Lab	2	7
CH4011	Process Simulation Lab	2	7
	Total	8