

B.Tech Curriculum (2025 Batch Onwards), Department of Chemical Engineering, IIT Hyderabad

Course No	Semester-1	Credits	Type
EP1108	Modern Physics	2	BS
CY1010/ CY1018	Environmental Chemistry	2	BS
MA1110	Calculus-I	1	BS
MA1220	Calculus-II	1	BS
ID1063	Introduction to programming	3	BE
CH1110	Introduction to Chemical Engineering	2	BE
CH1120	Applied Chemistry	2	BS
BT1010	Introduction to Life Sciences	1	BS
LA1760	Communication skills	2	LA
	Total	16	

Course No	Semester-3	Credits	Type
CH2110	Biological Engineering	3	DC
CH2120	Numerical Methods	3	DC
CH2130	Transport Phenomena	3	DC
CH2140	Chemical Engineering Thermodynamics	3	DC
CH2150	Applied Mathematics in Chemical Engineering	3	DC
LAxxxxx	LA/CA	2	LA/CA
	Total	17	

Course No	Semester-5	Credits	Type
CH3110	Mass Transfer – I	3	DC
CH3120	Mechanical Operations	3	DC
CH3130	Chemical Technology	2	DC
CH3140	Chemical Reaction Engineering-II	3	DC
CH3121	HT & FM Lab	2	DL
CHxxxxx	Dept Electives-I*	6	DE
	Total	19	

Course No	Semester-7	Credits	Type
CH4112	Process Design and Economics	3	DC
CH4111	Process Simulation Lab	2	DL
CH4121	MT and Control Lab	2	DL
CHxxxxx	Dept Electives-III*	3	DE
	Free Elective-II#	3	FE
	Total	13	

Course No	Semester-2	Credits	Type
CY1031	Chemistry Lab	2	BS
MA1140	Elementary Linear Algebra	1	BS
MA1150	Differential Equations	1	BS
CH1131	Applied Chemistry Lab	1	BS
ID1054	Digital Fabrication	2	BE
CH1130	Chemical Process Calculations	2	DC
CH1140	Thermodynamic Laws & Phase Transitions	3	BE
LAxxxxx	LA/CA	3	LA/CA
	Total	15	

Course No	Semester-4	Credits	Type
EP1031	Physics Lab	2	BS
ID1050	Intro to AI & ML	1	BE
EE1102	Basic Electrical Engineering	3	BE
CH2160	Materials Science for Chemical Engineers	2	BE
CH2170	Chemical Reaction Engineering-I	3	DC
CH2180	Heat transfer	3	DC
CH2190	Fluid Mechanics	3	DC
LAxxxxx	LA/CA	2	LA/CA
	Total	19	

Course No	Semester-6	Credits	Type
CH3150	Mass Transfer – II	2	DC
CH3160	Process Control	3	DC
CH3131	MUO and CRE Lab	2	DL
CHxxxxx	Dept Electives-II*/Internship	6	DE
	Free Electives-I#	4	FE
	Total	17	

Course No.	Semester-8	Credits	Type
CH4140	Process Intensification	1	DC
ID4006	Ethics and Values	1	LA/CA
CHxxxxx	Dept Electives-IV*	3	DE
	Free Electives-III#	6	FE
	Total	11	

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Semester	Course code	Name	Total credits	Type
5, 6, 7 or 8	CH4015 (Odd semester code)	Mini project	3	DE
	CH4025 (Even semester code)		3	
Note: Mini project credits are not extra. Out of 18 credits of DE, a maximum of 6 credits can be earned by substituting with mini projects.				

Important notes
BT1010: Introduction to Life Sciences (1 credit), LA1760: Communication skills and ID4006: Ethics & values (1 credit) are mandatory courses for all B.Tech students.
LA/CA, DE and FE courses must be taken & completed during the assigned semesters and not carried over.
If the 6th semester internship is in the domain of the department, the 6 credits will be counted towards DE.
If the 6th semester internship is in a different domain, the 6 credits will be counted towards FE.
EM courses will be counted towards FE.

Credit distribution:

Type	Number of credits	% distribution
Department Core (DC) + Department Lab (DL) + Department Elective (DE)	72	56.7
Basic Science (BS)	16	12.6
Basic Engineering (BE)	16	12.6
Free Elective (FE)	13	10.2
Liberal/Creative Arts (LA/CA)	10	7.9
Total	127	100

(Page 2/2)

B.Tech Honors Program (2025 Batch Onwards) Department of Chemical Engineering, IIT Hyderabad

Course No.	Course Type	Credits
CHxxxx	Electives (5th Semester)	3
CHxxxx	Electives (6th Semester)	3
CH4415	Honours (Thesis Stage-I)	3
CH4425	Honours Project (Thesis Stage-II)	3
	Total	12

B.Tech Minor Program (2025 Batch Onwards), Department of Chemical Engineering, IIT Hyderabad

Semester	Course No.	Course Name	Credits	Remarks
2	CH1140	Thermodynamic Laws & Phase Transitions	3	A student will take this if he/she has not taken any course in Thermodynamics
3	CH2130	Transport Phenomena		A student will take this if he/she has already taken any course in Thermodynamics
4	CH2170	Chemical Reaction Engineering-I	3	
5	CH3110	Mass Transfer – I	3	
6	CH3160	Process Control	3	
		Total	12	

B.Tech Double Major Program (2025 Batch Onwards), Department of Chemical Engineering, IIT Hyderabad

Semester	Course No.	Course Type	Credits
3	CH2130	Transport Phenomena	3
3	CH2140	Chemical Engineering Thermodynamics	3
3	CH2150	Applied Mathematics in Chemical Engineering	3
4	CH2170	Chemical Reaction Engineering – 1	3
5	CH3110	Mass Transfer – 1	3
5	CH3120	Mechanical Operations	3
6	CH3160	Process Control	3
7	CH4112	Process Design and Economics	3
		Total	24

Important notes

To enroll in the honors program, the department has GPA requirements and academic eligibility criteria. Interested students can contact their faculty advisors at the beginning of the fifth semester for further information.

The allotment for Minor/Double Major degrees is centralized. Allotment will be made based on GPA subject to caps imposed by the host department.