

**7. STUDY AND EVALUATION SCHEME FOR DIPLOMA PROGRAMME IN
CHEMICAL ENGINEERING (PULP & PAPER)**

FIRST SEMESTER

Sr. No	Subject	STUDY SCHEME			EVALUATION SCHEME						Total Marks
					Internal Assessment		External Assessment (Examination)				
		Hrs/week			Theory	Practical	Written Paper		Practical		
		L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
1.1*	Communication Skills - I	3	-	2	25	25	100	3	50	2	200
1.2*	Applied Mathematics - I	5	-	-	50	-	100	3	-	-	150
1.3*	Applied Physics – I	4	-	2	25	25	100	3	50	3	200
1.4*	Applied Chemistry – I	3	-	2	25	25	100	3	50	3	200
1.5*	Basics of Information Technology	-	-	4	-	50	-	-	100	3	150
1.6*	Engineering Drawing - I	-	-	6	-	50	100	3	25 (Viva)	2	175
1.7*	General Workshop Practice - I	-	-	6	-	50	-	-	+100	3	150
	# Student Centred Activities	-	-	3	-	25	-	-	-	-	25
	Total	15	-	25	125	250	500	-	375	-	1250

* Common with other diploma programmes

+ Includes 25 marks for Viva-voce

Student Centred Activities will comprise of co-curricular activities like extension lectures, library studies, games, hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C., NSS, Cultural Activities, Civil Defence/Disaster Management activities etc.

SECOND SEMESTER - CHEMICAL ENGINEERING (PULP AND PAPER)

Sr. No	Subject	STUDY SCHEME			EVALUATION SCHEME						Total Marks
					Internal Assessment		External Assessment (Examination)				
		Hrs/week			Theory	Practical	Written Paper		Practical		
		L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
2.1*	Communication Skills – II	3	-	2	25	25	100	3	50	2	200
2.2*	Applied Mathematics - II	5	-	-	50	-	100	3	-	-	150
2.3*	Applied Physics – II	4	-	2	25	25	100	3	50	3	200
2.4*	Applied Chemistry – II	3	-	2	25	25	100	3	50	3	200
2.5**	Applied Mechanics	3	-	2	25	25	100	3	50	3	200
2.6*	Engineering Drawing - II	-	-	6	-	50	100	3	25 (Viva)	2	175
2.7*	General Workshop Practice - II	-	-	6	-	50	-	-	+100	3	150
#	Student Centred Activities	-	-	2	-	25	-	-	-	-	25
Total		18	-	22	150	225	600	-	325	-	1300

* Common with other diploma programmes

** Common with diploma programmes in Mechanical Engineering and Civil Engineering

+ Includes 25 marks for Viva-voce

Student Centred Activities will comprise of co-curricular activities like extension lectures, library studies, games, hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C., NSS, Cultural Activities, Civil Defence/Disaster Management activities etc.

THIRD SEMESTER - CHEMICAL ENGINEERING (PULP AND PAPER)

Sr. No	Subject	STUDY SCHEME			EVALUATION SCHEME						Total Marks
					Internal Assessment		External Assessment (Examination)				
		Theory	Practical	Written Paper		Practical					
		Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs				
Hrs/week		L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	Total Marks
3.1 **	Fluid Flow										
3.2 **	Mechanical Operations	3	-	3	25	25	100	3	50		200
3.3 **	Chemical Process Calculations	4	-	-	25	-	100	3	-		125
3.4	Pulping Processes	4	-	3	25	25	100	3	50		200
3.5	Pulp Washing and Cleaning	4	-	-	25	-	100	3	-		125
3.6	Pulp Bleaching	3	-	3	25	25	100	3	50		200
# Student Centred Activities		-	-	6	-	25	-	-	-	-	25
Total		22	-	18	150	125	600	-	200	-	1075

** Common with Diploma Programme in Chemical Engineering, Chemical Engineering (Specialization in Polymer Engineering) and Chemical Engineering (Specialization in Paint Technology)

Student Centred Activities will comprise of co-curricular activities like extension lectures, library studies, games, hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C., NSS, Cultural Activities, Civil Defence/Disaster Management activities etc.

FOURTH SEMESTER - CHEMICAL ENGINEERING (PULP AND PAPER)

Sr. No	Subject	STUDY SCHEME			EVALUATION SCHEME						Total Marks
					Internal Assessment		External Assessment (Examination)				
		Theory	Practical	Written Paper		Practical					
		Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs				
Hrs/week		L	T	P							
4.1 **	Mass Transfer - I				4	-	3	25	25	100	3
4.2	Chemical Engineering Thermodynamics And Reaction Engineering	4	-	-	25	-	100	3	-	-	125
4.3 ***	Heat Transfer	4	-	3	25	25	100	3	50	3	200
4.4	Process Industries	4	-	3	25	25	100	3	50	3	200
4.5	Stock Preparation - I	3	-	-	25	-	100	3	-	-	125
4.6	Paper Making - I	3	-	3	25	25	100	3	50	3	200
# Student Centred Activities		-	-	6	-	25	-	-	-	-	25
Total		22	-	18	150	125	600	-	200	-	1075

** Common with Diploma Programme in Chemical Engineering

*** Common with other Diploma Programmes in (i) Chemical Engineering (specialization in Paint Technology) (ii) Chemical Engineering (specialization in Polymer Engineering)

Student Centred Activities will comprise of co-curricular activities like extension lectures, library studies, games, hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C., NSS, Cultural Activities, Civil Defence/Disaster Management activities etc.

Industrial Training - After examination of 4th Semester, the students shall go for training in a relevant industry/field organization for a minimum period of one month and shall prepare a diary. It shall be evaluated during 5th semester by his/her teacher for 50 marks. The students shall also prepare a report at the end of training and shall present it in a seminar, which will be evaluated for another 50 marks. This evaluation will be done by HOD and lecturer incharge – training in the presence of one representative from training organization.

FIFTH SEMESTER - CHEMICAL ENGINEERING (PULP AND PAPER)

Sr. No	Subject	STUDY SCHEME			EVALUATION SCHEME						Total Marks
					Internal Assessment		External Assessment (Examination)				
		Hrs/week		Theory	Practical	Written Paper		Practical			
		L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
	Industrial Training	-	-	-	-	50	-	-	50	3	100
5.1 *	Employability Skills - I	-	-	2	-	25	-	-	50	3	75
5.2 *	Environmental Education	3	-	-	25	-	100	3	-	-	125
5.3 **	Mass Transfer - II	4	-	3	25	25	100	3	50	-	200
5.4	Stock Preparation - II	3	-	3	25	25	100	3	50	3	200
5.5	Paper Making - II	3	-	3	25	25	100	3	50	3	200
5.6 **	Computer Applications in Chemical Industry	-	-	3	-	50	-	-	100	3	150
5.7	Chemical Recovery	3	-	3	25	25	100	3	50	3	200
5.8	Minor Project Work	-	-	3	-	50	-	-	100	3	150
	# Student Centred Activities	-	-	4	-	25	-	-	-	-	25
	Total	16	-	24	125	300	500	-	500	-	1425

* Common with other Diploma Programmes

** Common with Diploma Programme in Chemical Engineering

Student Centred Activities will comprise of co-curricular activities like extension lectures, library studies, games, hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C., NSS, Cultural Activities, Civil Defence/Disaster Management activities etc.

SIXTH SEMESTER - CHEMICAL ENGINEERING (PULP AND PAPER)

Sr. No	Subject	STUDY SCHEME			EVALUATION SCHEME						Total Marks
					Internal Assessment		External Assessment (Examination)				
		Theory	Practical	Written Paper		Practical					
		Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs				
Hrs/week		L	T	P							
6.1 *	Employability Skills-II				-	-	2	-	25	-	-
6.2 *	Entrepreneurship Development and Management	3	-	-	25	-	100	3	-	-	125
6.3 ***	Process Plant Utilities	4	-	-	25	-	100	3	-	-	125
6.4 **	Process Instrumentation and Control	4	-	3	25	25	100	3	50	3	200
6.5 +	Pollution Control in Chemical Process Industry	4	-	3	25	25	100	3	50	3	200
6.6	Paper Properties & Conversion	3	-	3	25	25	100	3	50	3	200
6.7	Major Project Work	-	-	6	-	50	-	-	100	3	150
# Student Centred Activities		-	-	5	-	25	-	-	-	-	25
Total		18	-	22	125	175	500	-	300	-	1100

* Common with other Diploma Programmes

** Common with Diploma Programmes in (i) Chemical Engineering (ii) Chemical Engineering (Spl. in Paint Technology) (iii) Chemical Engineering (Polymer Engineering)

*** Common with Diploma Programmes in (i) Chemical Engineering (ii) Chemical Engineering (Spl. in Paint Technology)

+ Common with Diploma Programme in Chemical Engineering

Student Centred Activities will comprise of co-curricular activities like extension lectures, library studies, games, hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C., NSS, Cultural Activities, Civil Defence/Disaster Management activities etc.