



Rashtrasant Tukadoji Maharaj Nagpur University

Structure & Syllabus

B. Tech (Chemical Technology)

SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FIRST SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment	University	College Assessment	University		
1	CT-BS-101 T	Maths I	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
2	CT-BS-102 T	Physics	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
3	CT-BS-103 T	Chemistry-I	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
4	CT-BS-104 T	Fundamentals of Reaction Mechanism	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
5	CT-GES-105 T	Electrical & Electronics Engineering	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CT-BS-106 P	Physics Laboratory	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	45%
7	CT-BS-107 P	Chemistry I Laboratory	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
8	CT-BS-108 P	Fundamentals of Reaction Mechanism Laboratory	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
9	CT-GES-109 P	Electrical & Electronics Engineering Laboratory	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
10	CT-GES-110 P	Engineering Graphics	BGE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
		Total		11	11	0	22	11	5.5	0	16.5	90	210	125	125	550	-

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SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
SECOND SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment	University	College Assessment	University		
1	CT-BS-201T	Maths II	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
2	CT-BS-202 T	Properties of Matter	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
3	CT-BS-203 T	Chemistry-II	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
4	CT-BS-204 T	Organic Process Technology	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
5	CT-GES-205 T	Thermodynamics I	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CT-GES -206 T	Engineering & Solid Mechanics	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
7	CT-HSMC-HS-207 T	HASS I Communication Skill	BGE	2	0	0	2	0	0	0	0	50	-	-	-	50	Audit course S/NS**
8	CT-BS-208 P	Properties of Matter Laboratory	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
9	CT-BS-209 P	Chemistry -II Laboratory	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
10	CT-BS-210 P	Organic Process Technology Laboratory	BGE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
11	CT-GES-211 P	Engineering & Solid Mechanics Laboratory	BGE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
12	CT-HSMC-HS-212 P	HASS I (Communication Skill Laboratory)	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
		Total		17	12	0	29	15	6	0	21	185	315	125	125	750	-

****S/NS Grade for Audit Course - Satisfactory / Not Satisfactory**

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SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
THIRD SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment	University	College Assessment	University		
1	CT-PCC- 301T	Material & Energy Balance Computations	BCE	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
2	CT-PCC- 302T	Particle & Fluid Particle Processing	BCE	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
3	CT-PCC- 303T	Thermodynamics – II	BCE	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
4	CT-GES- 304 T	Material Science	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
5	CT-BS- 305 T	Maths - III	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CT-BS- 306 T	Elementary Molecular Approach	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
7	CT-GES- 307P	Material Science Laboratory	BGE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
8	CT-BS- 308 P	Elementary Molecular Approach – Laboratory	BGE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
9	CT-PCC- 309P	Particle & Fluid Particle Processing Lab	BCE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
		Total		18	8	3	29	18	4	3	25	180	420	75	75	750	-

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SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FOURTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment	University	College Assessment	University		
1	CT-PCC-401T	Process Technology & Economics	BCE	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
2	CT-CS-402T	*Special Technology I	BCHT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
3	CT-PCC-403T	Fluid Mechanics	BCE	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
4	CT-PCC-404T	Numerical Methods in Chemical Engineering	BCE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
5	CT-BS-405 T	Inorganic Process Technology	BGE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CT-HSMC-HS - 406 T	HASS II Functional English	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
7	CT-PCC-407P	Fluid Mechanics Lab	BCE	0	2	0	2	0	1	0	1	-	-	25	25	50	45%
8	CT-PCC-408P	Numerical Methods in Chemical Engineering Lab	BCE	0	2	0	2	0	1	0	1	-	-	25	25	50	50%
9	CT-BS-409 P	Inorganic Process Technology Laboratory	BGE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
10	CT-GES-410 P	Engineering Workshop	BGE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
11	MC	Environmental Sciences	BCE	2	0	0	0	0	0	0	-	-	-	-	-	-	Audit Course S/NS**
		Total		16	10	2	28	16	5	2	23	150	350	100	100	700	-

** S/NS Grade for Audit Course S – Satisfactory or NS – Not Satisfactory

*Food Technology

*Oil Technology

*Petrochemical Technology

*Pulp and Paper Technology

*Plastics and Polymer Technology

*Surface Coating Technology

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SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FIFTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment	University	College Assessment	University		
1	CT-PCC-501T	Heat Transfer	BCE	3	0	1	4	3	0	0	3	30	70	-	-	100	45%
2	CT-PCC-502T	Chemical Reaction Engineering I	BCE	3	0	1	4	3	0	0	3	30	70	-	-	100	45%
3	CT-PCC-503T	Mass Transfer I	BCE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
4	CT-CS-504T	*Special Technology II	BCHT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
5	CT-OEL-505T	Open Elective I	BCE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CT-HSMC-HS-506T	HASS III Industrial Economics & Project Management	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
7	CT-PCC-507P	Chemical Reaction Engineering I Lab	BCE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
8	CT-CS-508P	*Special Technology I Lab	BCHT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
9	CT-PCC-509P	Heat Transfer Lab	BCE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
10	MC	Constitution of India/ Essence of Indian Traditional Knowledge		2	0	0	2	0	0	0	0	-	-	-	-	-	Audit Course S/NS**
		Total		19	9	2	30	17	4.5	0	21.5	165	385	75	75	700	-
** S/NS Grade for Audit Course S. Satisfactory NS: N=Not Satisfactory																	

** S/NS Grade for Audit Course S – Satisfactory or NS – Not Satisfactory

Students can opt one of the open elective courses offered by Chemical Engineering Program only as given below

Elective	Subject Name		
	BOARD		
	BCE		
Open Elective I	Environmental Pollution and Control	Renewable Energy	Energy Conservation and Recycling

*Food Technology, *Oil Technology, *Petrochemical Technology, *Pulp and Paper Technology,
*Plastic and Polymer Technology, *Surface Coating Technology

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SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
SIXTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment	University	College Assessment	University		
1	CT-PCC-601T	Chemical Reaction Engineering II	BCE	3	0	1	4	3	0	0	3	30	70	-	-	100	45%
2	CT-PCC-602T	Process Equipment Design	BCE	3	0	1	4	3	0	0	3	30	70	-	-	100	45%
3	CT-PCC-603T	Process Dynamics & Control	BCE	3	0	1	4	3	0	0	3	30	70	-	-	100	45%
4	CT-CS-604T	*Special Technology III	BCHT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
5	CT-CS-605T	*Special Technology IV	BCHT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CT-HSMC-HS-606T	HASS IV Industrial organization & Entrepreneurship Development	BGE	2	0	0	2	2	0	0	2	15	35	-	-	50	45%
7	CT-PCC-607P	Chemical Reaction Engineering II Lab	BCE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
8	CT-PCC-608P	Process Equipment Design & Drawing Lab	BCE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
9	CT-PCC-609P	Process Dynamics & Control Lab	BCE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
10	CT-CS-610P	*Special Technology II Lab	BCHT	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
11	CT-CS-611P	Summer Internship (3-4 weeks) (to be evaluated in seventh semester)	BCHT	0	0	0	0	0	0	0	0	-	-	-	-	-	-
		Total		17	12	3	32	17	6	0	23	165	385	100	100	750	-

*Food Technology, *Oil Technology, *Petrochemical Technology, *Pulp and Paper Technology,
*Plastics and Polymer Technology, *Surface Coating Technology

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SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
SEVENTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment		University			
												College Assessment	University	College Assessment	University		
1	CT-PCC-701T	Transport Phenomena	BCE	3	0	1	4	3	0	1	4	30	70	-	-	100	45%
2	CT-PCC-702T	Mass Transfer II	BCE	4	0	1	5	4	0	1	5	30	70	-	-	100	45%
3	CT-CS-703T	*Special Technology V	BCHT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
4	CT-CS-704T	*Special Technology VI	BCHT	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
5	CT-OEL-705T	Open Elective II	BCE	3	0	0	3	3	0	0	3	30	70	-	-	100	45%
6	CT-CS-706P	*Special Technology III Lab	BCHT	0	6	0	6	0	3	0	3	-	-	25	25	50	50%
7	CT- PCC-707P	Mass Transfer Lab	BCE	0	3	0	3	0	1.5	0	1.5	-	-	25	25	50	50%
8	CT-CS-708P	Seminar and Summer Internship Evaluation	BCHT	0	3	0	3	0	1.5	0	1.5	-	-	50	-	50	50%
		Total		16	12	2	30	16	6	2	24	150	350	100	50	650	-

Students can opt one of the open elective courses offered by Chemical Engineering Program only as given below

Elective	Subject Name		
	BOARD		
	BCE		
Open Elective II	Nanoscience and Nanotechnology	Optimization of Chemical Processes	Biochemical Engineering

*Food Technology, *Oil Technology, *Petrochemical Technology, *Pulp and Paper Technology,
*Plastics and Polymer Technology, *Surface Coating Technology

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SCHEME OF EXAMINATION
RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
EIGHTH SEMESTER B. TECH (CHEMICAL TECHNOLOGY)

Sr. No.	Code	Subject	Board	Work Load Hrs				Credit				Marks				Total Marks	Min. % of Marks Required for Passing
	Theory (T)			L	P	T	Total	L	P	T	Total	Theory		Practical			
	Practical (P)											College Assessment	University	College Assessment	University		
1	CT-PCC-801P	Industry Internship / Project	BCHT	0	6	0	6	0	9	0	9	-	-	100	100	200	50%
		Total		0	6	0	6	0	9	0	9	-	-	100	100	200	-

