

**HARCOURT BULTER TECHNICAL UNIVERSITY KANPUR**  
**SCHOOL OF CHEMICAL TECHNOLOGY**  
**DEPARTMENT OF CHEMICAL TECHNOLOGY – FOOD TECHNOLOGY**

**Semester wise Course Structure**

**B. Tech. Chemical Technology - Food Technology**  
**(Applicable from Session 2017-2018 for new entrants)**

**Year I, Semester-I**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks	
					L	T	P	MSE	TA	Lab.	Total			
1	BSC	Chemistry	BCY 101	4	3	0	2	15	20	15	50	50	100	
2	BSC	Mathematics I	BMA 101	4	3	1	0	30	20	-	50	50	100	
3	ESC	Electronics & Instrumentation Engineering	EET 101	3	3	0	0	30	20	-	50	50	100	
4	ESC	Engineering Graphics	ECE 101	3	0	0	6	30	20	-	50	50	100	
5	ESC	Computer Concepts & Programming	ECS 101	4	3	0	2	15	20	15	50	50	100	
6	ESC	Workshop Practice	EWS 101	2	0	0	4	--	20	30	50	50	100	
7	MC(No n-Credit)	Environment & Ecology	ECE 103	0	2	0	0	30	20	-	50	50	100	
<b>Total Credits 20</b>														

**Year I, Semester-II**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				Total Marks		
					L	T	P	ESE			Total			
								MSE	TA	Lab				
1	BSC	Physics	BPH 102	4	3	0	2	15	20	15	50	50	100	
2	BSC	Mathematics II	BMA 102	4	3	1	0	30	20	-	50	50	100	
3	ESC	Electrical Engineering	EEE 102	4	3	0	2	15	20	15	50	50	100	
4	ESC	Engineering Mechanics	EME 102	3	3	0	0	30	20	-	50	50	100	
5	HSMC	English Language & Composition	HHS 102	2	2	0	0	30	20	-	50	50	100	
6	HSMC	Professional Communication	HHS 104	3	2	0	2	15	20	15	50	50	100	
<b>Total Credits 20</b>														

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**Semester wise Course Structure**

**B. Tech. Chemical Technology- Food Technology**  
**(Applicable from Session 2018-2019 for new entrants)**

**Year II, Semester-III**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	BSC	Mathematics III	BMA 201	4	3	1	0	30	20	-	50	50	100
2	ESC	Materials & Energy Balance	TCH 201	5	3	2	0	30	20	-	50	50	100
3	PCC	Fluid Flow & Unit operation	TCH 203	5	3	1	3	15	20	15	50	50	100
4	PCC	Introduction to Food Technology	TFT 201	5	3	0	6	15	20	15	50	50	100
5	HSMC	Organisational Behaviour	HHS 203	3	3	0	0	30	20	-	50	50	100
6	MC (Non-Credit)	Cyber Security	ECS 205	0	2	0	0	30	20		50	50	100
<b>Total Credits 22</b>													

**Year II, Semester-IV**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	BSC	Modern Analytical Techniques	BCY 202	4	3	0	3	15	20	15	50	50	100
2	BSC	Computer Oriented Numerical Methods	BMA 206	5	3	1	3	15	20	15	50	50	100
3	ECC	Heat Transfer Operations	TCH 202	3	3	0	0	30	20	-	50	50	100
4	PCC	Chemical Engineering Thermodynamics	TCH 204	3	3	0	0	30	20	-	50	50	100
5	PCC	Food Microbiology	TFT 202	4	3	0	3	15	20	15	50	50	100
6	HSMC	Engg Economics & Management	HHS 202	3	3	0	0	30	20	-	50	50	100
7	MC (Non-Credit)	Indian Constitution	HHS 206	0	2	0	0	30	20		50	50	100
<b>Total Credits 22</b>													

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**Semester wise Course Structure**

**B. Tech. Chemical Technology- Food Technology**  
**(Applicable from Session 2019-2020 for new entrants)**

**Year III, Semester-V**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	PCC	Mass Transfer Operations	TCH 301	4	3	1	0	30	20	-	50	50	100
2	PCC	Chemical Reaction Engineering	TCH 303	4	3	1	0	30	20	-	50	50	100
3	PCC	Food Biochemistry	TFT 301	3	3	0	0	30	20	-	50	50	100
4	PCC	Food Chemistry	TFT 303	5	3	0	6	15	20	15	50	50	100
5	OEC (Mechanical)	Energy Conversion Systems and Devices	EME 325	3	3	0	0	30	20	-	50	50	100
6	OEC (Humanities)	Entrepreneurship Development	HHS 341	3	3	0	0	30	20	-	50	50	100
<b>Total Credits</b>					<b>22</b>								

**Year III, Semester-VI**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab.	Total		
1	PCC	Instrumentation & Process Control	TCH 302	5	3	1	3	15	20	15	50	50	100
2	PCC	Principles of Food preservation	TFT 302	4	3	1	0	30	20	-	50	50	100
3	PCC	Technology of Cereals, Pulses & Oilseeds	TFT 304	5	3	0	6	15	20	15	50	50	100
4	PCC	Fruits, Vegetables and Plantation Products	TFT 306	5	3	0	6	15	20	15	50	50	100
5	OEC (Maths)	Operations Research	BMA 302	3	3	0	0	30	20	-	50	50	100
<b>Total Credits</b>					<b>22</b>								

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**Semester wise Course Structure**

**B. Tech. Chemical Technology-Food Technology**  
**(Applicable from Session 2020-2021 for new entrants)**

**Year IV, Semester-VII**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks	
					L	T	P	MSE	TA	Lab	Total			
1	PCC	Food Safety and Quality Control	TFT 401	4	3	0	3	15	20	15	50	50	100	
2	PEC	Programme Elective Course I	TFT 403 OR TFT 405	3	3	0	0	30	20	-	50	50	100	
3	PEC	Programme Elective Course II	TFT 407 OR TFT 409	2	2	0	0	30	20	-	50	50	100	
4	PEC	Programme Elective Course III	TPL 411 OR TPL 413	2	2	0	0	30	20	-	50	50	100	
5	OEC (Food Tech.)	Nutritional aspects of Natural & Processed Foods	TFT 415	3	3	0	0	30	20	-	50	50	100	
6		Industrial Training	TFT 461	2	0	0	4	-	50	-	50	50	100	
7		Seminar	TFT 471	2	0	0	4	-	50	-	50	50	100	
8		Project	TFT 497	4	0	0	8	-	50	-	50	50	100	
9		Educational Tour	TFT 417	0	0	0	0	-	-	-	-	-	-	
<b>Total Credits</b>					<b>22</b>									

**Year IV, Semester-VIII**

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks	
					L	T	P	MSE	TA	Lab	Total			
1	PEC	Programme Elective Course IV*	TCH 402 OR TCH 404	3	3	0	0	30	20	-	50	50	100	
2	PEC	Programme Elective Course V*	TFT 402 OR TFT 404	3	3	0	0	30	20	-	50	50	100	
3	PEC	Programme Elective Course VI*	TFT 406 OR TFT 408	2	2	0	0	30	20	-	50	50	100	
4	OEC (Chemical Engg.)	Transport Phenomenon*	TCH 406	4	3	1	0	30	20	-	50	50	100	
5		Project	TPL 498	10	0	0	20	-	50	-	50	50	100	
<b>Total Credits</b>					<b>22</b>									

\*These courses are either MOOC/Neptal online courses of equal weightage and similar title available at the start of the semester OR regular courses in case students donot opt industry based project

**List of Elective Courses**

<b>S. No.</b>	<b>PEC Names</b>	<b>Subject Name</b>	<b>Subject Code</b>
1.	<b>Programme Elective Course I</b>	Traditional & Fermented Foods	TFT 403
		Food Products and Process Development	T 405
2.	<b>Programme Elective Course II</b>	Food Processing Waste Management	TFT 407
		Quality Management of Frozen Foods	TFT 409
3.	<b>Programme Elective Course III</b>	Technology of Animal Foods	TFT 411
		Nutraceutical & Functional Foods	TFT 413
4.	<b>Programme Elective Course IV</b>	Process Modeling & Simulation	TCH 402
		Process Equipment Design	TCH 404
5.	<b>Programme Elective Course V</b>	Innovative Techniques in Food Processing	TFT 402
		Computer Applications in Food Processing	TFT 404
6.	<b>Programme Elective Course VI</b>	Food Packaging & Storage Engineering	TFT 406
		Rheological and Sensory Analysis of Foods	TFT 408