

Birla Institute of Technology, Mesra, Ranchi


Course Structure for B.Tech. (Food Engineering)

Based on NEP-2020, CBCS and OBE, Effective from 2024-2025

Sr. No.	Semester of Study (Recommended)	Category of Course	Course Code	Subjects	Mode of Delivery & Credits <i>L-Lecture; T-Tutorial; P-Practical</i>			Total Credits	
					L (Periods / Week)	T (Periods/ Week)	P (Periods/ Week)		
FIRST					THEORY				
I.1		FS	MA24101	Mathematics - I	3	1	0	4	
I.2			PH24101	Physics	3	1	0	4	
I.3			BE24101	Biological Science for Engineers	2	0	0	2	
I.4			GE	CS24101	Programming for Problem Solving	3	1	0	4
I.5			EE24101	Basics of Electrical Engineering	2	1	0	3	
LABORATORIES									
I.6	FS	PH24102	Physics Laboratory	0	0	2	1		
I.7	GE	CS24102	Programming for Problem Solving Laboratory	0	0	2	1		
I.8		EE24102	Electrical Engineering Laboratory	0	0	2	1		
I.9	HSS	HS24131	Communication Skill - I	0	0	3	1.5		
I.10	MC	MC24 101/102/1 03 /104/105	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) /Entrepreneurship	0	0	2	1		
TOTAL (Theory + Labs)								22.5	
SECOND					THEORY				
II.1		FS	MA24103	Mathematics - II	3	1	0	4	
II.2			CH24101	Chemistry	3	1	0	4	
II.3		GE	EC24101	Basic Electronics	2	1	0	3	
II.4		ME24101	Basics of Mechanical Engineering	2	1	0	3		
II.5		FS	CE24101	Environmental Science	2	0	0	2	
LABORATORIES									
II.6	FS	CH24102	Chemistry Laboratory	0	0	2	1		
II.7	GE	EC24102	Basic Electronics Laboratory	0	0	2	1		
II.8		ME24102	Engineering Graphics	0	0	4	2		
II.9		PE24102	Workshop Practice	0	0	2	1		
II.10	MC	MC24 106/107/1 08/109 /110	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) /Entrepreneurship	0	0	2	1		
TOTAL (Theory + Labs)								22	
GRAND TOTAL FOR FIRST YEAR								44.5	
THIRD					THEORY				
III.1		PC	CL24201	Thermodynamics	3	1	0	4	
III.2			CL24203	Fluid Mechanics	3	1	0	4	
III.3			CL24205	Chemical Process	2	1	0	3	

				Calculations					
III.4		PC	CL24207	Heat Transfer Operations	3	1	0	4	
III.5		FS	MA24201	Numerical Methods	2	0	0	2	
III.6		HSS	MT24131	UHV-II: Understanding Harmony	3	0	0	3	
		LABORATORIES							
III.7		FS	MA24202	Numerical Methods Laboratory	0	0	2	1	
III.8		MC	MC24 201/202/2 03/204 /205	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) / Entrepreneurship	0	0	2	1	
		TOTAL (Theory + Labs)							22
	FOURTH	THEORY							
IV.1		PC	CL24209	Mechanical Operations	3	0	0	3	
IV.2			FE24201	Principle of Food Processing and Preservation	3	1	0	3	
IV.3			FE24203	Programming Language and Data Base Management System	3	1	0	3	
IV.4			FE24205	Biochemistry and Human Nutrition	3	0	0	3	
IV.5		PE	FE24XXX	Program Elective (PE-I)	3	0	0	3	
IV.6		OE	XX24XXX / MO24201	Open Elective - I / MOOC - I	3	0	0	3	
IV.7		HSS	HS24211	Indian Knowledge System	2	0	0	0	
		LABORATORIES							
IV.8		PC	FE24204	Programming Language and Data Base Management System Lab	0	0	3	1.5	
IV.9		PC	FE24206	Food Process Engineering & Technology Lab	0	0	3	1.5	
IV.10		MC	MC24 206/207/2 08/209/21 0	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) / Entrepreneurship	0	0	2	1	
		TOTAL (Theory + Labs)							22.0
		GRAND TOTAL FOR SECOND YEAR							44
	FIFTH	THEORY							
V.1		PC	FE24301	Food Microbiology	4	0	0	4	
V.2		PC	FE24303	Technology of Fruits, Vegetable, Spices and Plantation Crops Processing	3	0	0	3	
V.3		PC	FE24305	Food Chemistry	3	0	0	3	
V.4		PC	FE24305	Project Engineering and Economics	3	0	0	3	
V.5		PE	FE24XXX	Program Elective-II)	3	0	0	3	
V.6		OE	XX24XXX / MO24301	Open Elective - II / MOOC - II	3	0	0	3	
		LABORATORIES							

V.7		PC	FE24302	Food Microbiology Lab	0	0	3	1.5
V.8			FE24304	Food Chemistry and Quality Control Lab 1	0	0	3	1.5
V.9		HSS	HS24133	Communication Skill - II	0	0	3	1.5
V.10		PC	FE24300	Project - I				2
TOTAL (Theory + Labs)								25.5
	SIXTH	THEORY						
VI.1		PC	FE24311	Process Control & Instrumentation	3	1	0	4
VI.2		PC	FE 24311	Food Process Engineering	3	0	0	3
VI.3		PC	FE 24313	Cereal, Pulses and Oilseeds Processing Technology	3	0	0	3
VI.4		PE	FE24XXX	Program Elective -III	3	0	0	3
VI.5		PE	FE24XXX	Program Elective -IV	3	0	0	3
VI.6		OE	XX24XXX / MO24303	Open Elective - III / MOOC - III	3	0	0	3
LABORATORIES								
VI.7		PC	FE24306	Food Chemistry and Quality Control Lab II	0	0	3	1.5
VI.8			FE24350	Project-II	0	0	0	2
TOTAL (Theory + Labs)								22.5
GRAND TOTAL FOR THIRD YEAR								48
	SEVENTH	THEORY						
VII.1		PC	FE24401	Food Quality Control , Laws, Standard and Regulation	3	1	0	4
VII.2		PC	FE24403	Dairy and Animal Product Processing Technology	3	0	0	3
VII.3		PE	FE24XXX	Program Elective -V)	3	0	0	3
VII.4		PE	FE24XXX	Program Elective -VI)	3	0	0	3
VII.5		OE	XX24XXX /MO2440 1	Open Elective (OE-IV)/MOOC-IV	3	0	0	3
VII.6		HSS	MT24204	Constitution of India	2	0	0	0
LABORATORIES								
VII.7		PC	FE24402	Food Process Engineering & Technology Lab -II	0	0	3	1.5
VII.8		MC	MC24400	Summer Training				4
VII.9		PC	FE24400	Project - III				3
TOTAL (Theory + Labs)								24.5
VIII.1	EIGHTH	PC	FE24450/ FE24490	Project-IV / Industry Internship				6
VIII.2			FE24498	Comprehensive Viva				1
TOTAL (Theory + Labs)								7
GRAND TOTAL FOR FOURTH YEAR								31.5
GRAND TOTAL FOR B.TECH.								168


 S.P. Singh
 8/11/2025
 (HOD, chemical)

