NATIONAL BOARD OF ACCREDITATION

Data Capturing Points of the Program Applied for NBA Accreditation– Tier I/II UG (Engineering) Institute Programs

Program Name : Food Technology	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 10746	**Date of Submission**: 29-05-2025

PART A- Profile of the Institute

A1.Name of the Institute: HARCOURT BUTLER TECHNICAL UNIVERSITY	
Year of Establishment : 1921-1994	Location of the Institute: KANPUR
A2. Institute Address:NAWABGANJ, KANPUR-208002	
City:KANPUR	State:Uttar Pradesh
Pin Code:208002	Website:www.hbtu.ac.in
Email:vc@hbtu.ac.in	Phone No(with STD Code):0512-253400125340022
A3. Name and Address of the Affiliating University (if any):	
Name of the University :	City: Kanpur(Nagar)
State : Uttar Pradesh	Pin Code: 208002
A4. Type of the Institution: University	
A5. Ownership Status: State Government	

A6. Details of all Programs being Offered by the Institution:

- No. of UG programs: **12**
- No. of PG programs: **6**

Table No. A6.1: List of all programs offered by the Institute.

Sr.No.	Discipline	Level of program	Name of the program	Year of Start	Year of Closed	Name of The Department
1	Engineering & Technology	UG	Biochemical Engineering	1964	--	Biochemical Engineering
2	Engineering & Technology	PG	Biochemical Engineering	1966	--	Biochemical Engineering
3	Engineering & Technology	PG	Chemical Engineering	1960	--	Chemical Engineering
4	Engineering & Technology	UG	Chemical Engineering	1954	--	Chemical Engineering
5	Engineering & Technology	PG	Chemical Technology	1966	--	Oil Technology
6	Engineering & Technology	UG	Civil Engineering	1966	--	Civil Engineering
7	Engineering & Technology	PG	Computer Aided Design	2000	--	Mechanical Engineering
8	Engineering & Technology	UG	Computer Science and Engineering	1984	--	Computer Science and Engineering
9	Engineering & Technology	UG	Electrical Engineering	1965	--	Electrical Engineering
10	Engineering & Technology	UG	Electronics Engineering	1990	--	Electronics Engineering
11	Engineering & Technology	UG	Food Technology	1964	--	Food Technology
12	Engineering & Technology	PG	Food Technology	1966	--	Food Technology
13	Engineering & Technology	UG	Leather Technology	1978	--	Leather Technology
14	Engineering & Technology	PG	Masters in Computer Applications	1987	--	Computer Science and Engineering
15	Engineering & Technology	UG	Mechanical Engineering	1964	--	Mechanical Engineering
16	Engineering & Technology	UG	Oil Technology	1921	--	Oil Technology

17	Engineering & Technology	UG	Paint Technology	1964	--	Paint Technology
18	Engineering & Technology	UG	Plastics Technology	1964	--	Plastic Technology

A7. Programs to be considered for Accreditation vide this Application:

Table No. A7.1: List of programs to be considered for accreditation.

Name of the Department	Having Allied Departments	Name of the Program	Program Level
Computer Science and Engineering	No	Computer Science and Engineering	UG
Food Technology	No	Food Technology	UG
Electronics Engineering	No	Electronics Engineering	UG
Plastic Technology	No	Plastics Technology	UG
Mechanical Engineering	No	Mechanical Engineering	UG

Table No. A7.2: Allied Department(s) to the Department of the program considered for accreditation as above.

Cluster ID. Name of the Department (in table no. A7.1) Name of allied Departments/Cluster (for table no. A7.1)

No Record

PART-B: Program information

B1. Provide the Required Information for the Program Applied For:

Table No. B1: Program details.

A. List of the Programs Offered by the Department:

SR.NO.	PROGRAM NAME	PROGRAM APPLIED LEVEL	YEAR OF START / YEAR OF CLOSED	SANCTIONED INTAKE	INCREASE/DECREASE INTAKE (if any)	YEAR OF INCREASE/DECREASE	CURRENT INTAKE	YEAR OF AICTE APPROVAL	AICTE/COMPE AUTHORITY AI DETAILS
1	Food Technology	UG	1964 / --	30	Yes	2022	51	2022	F.No. Northern/ 44643637092/2 Date of Approva Mar-2025

Sanctioned Intake for Last Five Years for the Food Technology	
Academic Year	**Sanctioned Intake**
2024-25	51
2023-24	51
2022-23	51
2021-22	30
2020-21	30
2019-20	30

List of the Allied Departments/Cluster and Programs:

B2. Detail of Head of the Department for the program under consideration:

A. Name of the HoD :	Prof. Vivek Kumar
B. Nature of appointment:	Regular
C. Qualification:	Ph.D

B3. Program Details

Table No.B3.1: Admission details for the program excluding those admitted through multiple entry and exit points.

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2024-25 (CAY)	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)	2020-21 (CAYm4)	2019-20 (CAYm5)	2018-19 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	51	51	30	30	30	30	30

N1=Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	50	39	26	16	22	32	30
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	1	4	1	0	0	0
N3=Separate division if any	0	0	0	0	0	0	0
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	9	9	2	6	9	8	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	59	49	32	23	31	40	30

CAY= Current Academic Year. CAYm1= Current Academic Year Minus 1 CAYm2= Current Academic Year Minus 2. LYG= Last Year Graduate. LYGm1= Last Year Graduate Minus 1. LYGm2= Last Year Graduate Minus 2.

B4. Enrolment Ratio in the First Year

Table No. B4.1: Student enrolment ratio in the 1st year.

Year of entry	N (From Table 4.1)	N1 (From Table 4.1)	N4 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2024-25 (CAY)	51	50	9	115.69
2023-24 (CAYm1)	51	39	9	94.12
2022-23 (CAYm2)	30	26	2	93.33

Average [(ER1 + ER2 + ER3) / 3] = 101.05≡ 100

B5. Success Rate of the Students in the Stipulated Period of the Program

Table No.B5.1: The success rate in the stipulated period of a program.

Item	(2020-21) LYG	(2019-20) LYGm1	(2018-19) LYGm2
A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).	31.00	40.00	30.00
B=No. of students who graduated from the program in the stipulated course duration	31.00	39.00	30.00
Success Rate (SR)= (B/A) * 100	100.00	97.50	100.00

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 99.17

B6. Academic Performance of the First-Year Students of the Program

Table No.B6.1: Academic Performance of the First-Year Students of the Program.

Academic Performance	CAYm1(2023-24)	CAYm2(2022-23)	CAYm3 (2021-22)
X=(Mean of 1st year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 1st year/10)	6.51	5.93	6.53
Y=Total no. of successful students	46.00	25.00	20.00
Z=Total no. of students appeared in the examination	46.00	28.00	22.00
API [X*(Y/Z)]	6.51	5.30	5.93

Average API[(AP1+AP2+AP3)/3] : 5.91

B7: Academic Performance of the Second Year Students of the Program

Table No.B7.1: Academic Performance of the Second Year Students of the Program.

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2rd year/10)	6.27	7.22	6.65
Y=Total no. of successful students	28.00	21.00	31.00
Z=Total no. of students appeared in the examination	29.00	21.00	30.00
API [X * (Y/Z)]	6.05	7.22	6.87

Average API [(AP1 + AP2 + AP3)/3] : 6.71

B8. Academic Performance of the Third Year Students of the Program

Table No.B8.1: Academic Performance of the Third Year Students of the Program

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10)	7.02	7.16	7.25
Y=Total no. of successful students	21.00	31.00	39.00
Z=Total no. of students appeared in the examination	21.00	31.00	39.00
API [X*(Y/Z)]:	7.02	7.16	7.25

Average API [(AP1 + AP2 + AP3)/3] : 7.14

B9. Placement, Higher Studies, and Entrepreneurship

Table No.B9.1: Placement, higher studies, and entrepreneurship details.

Item	LYG (2020-21)	LYGm1(2019-20)	LYGm2(2018-19)
FS*=Total no. of final year students	31.00	39.00	30.00
X=No. of students placed	23.00	23.00	26.00
Y=No. of students admitted to higher studies	3.00	1.00	1.00
Z= No. of students taking up entrepreneurship	2.00	0.00	1.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	90.32	61.54	93.33

Average Placement Index = (P_1 + P_2 + P_3)/3: 81.73 Placement Index Points:

PART C: Faculty Details in Department and Allied Departments

(Data to be filled in for the Department and Allied Departments)

C1. Faculty details of Department and Allied Departments

Table No.C1: Faculty details in the Department for the past 3 years including CAY

Sr.No	Name of the Faculty	PAN No.	Highest degree	University	Area of Specialization	Date of Joining in this Institution	Experience in years in current institute	Designation at Time Joining in this Institution	Present Designation	The date on which Designated as Professor/ Associate Professor if any	Nature of Association (Regular/ Contract/ Ad hoc)	Currently Associat (Y/N)
1	Prof. Alak Kumar Singh	XXXXXXX48Q	Ph.D	UPTU, Lucknow	Food processing	29/09/1995	29.8	Lecturer	Professor	14/10/2013	Regular	Yes
2	Prof. Vivek Kumar	XXXXXXX60E	Ph.D	AKTU, Lucknow	Food Processing & Preservation, New Product Development, Food Process Optimization	22/01/2007	18.4	Assistant Professor	Professor	23/01/2023	Regular	Yes
3	Dr. ANURAG SINGH	XXXXXXX35Q	Ph.D	MGCGVV, Chitrakut	Food Technology	22/06/2022	2.11	Associate Professor	Associate Professor		Regular	Yes
4	Vipul Kumar	XXXXXXX43H	M.Tech	UPTU, Lucknow	Food Safety and quality, Food Beverages, Fermentation Technology	27/06/2022	2.10	Assistant Professor	Assistant Professor		Regular	Yes
5	Dr. Pankaj Jha	XXXXXXX48R	Ph.D	IIT, Guwahati	Food Fermentation, Food Packaging	20/09/2021	2.11	Assistant Professor	Assistant Professor		Contractual Fulltime	No
6	Dr. Anit Kumar	XXXXXXX01G	Ph.D	NIFTEM, Kundli	Fruit & vegetable processing, Dairy Technology, Traditional Foods	08/09/2018	5.3	Assistant Professor	Assistant Professor		Contractual Fulltime	No

7	Dr. Arunima Singh	XXXXXXX66E	Ph.D	HBTU, Kanpur	Waste valorization, oil extraction, food preservation, nutraceuticals and functional foods	09/10/2024	0.7	Assistant Professor	Assistant Professor		Contractual Fulltime	Yes
8	Aisha Rahman	XXXXXXX78N	M.Tech	HBTU, Kanpur	Food Technology, Dairy Technology, Food Microbiology	02/08/2024	0.9	Assistant Professor	Assistant Professor		Contractual Fulltime	Yes
9	Vikas Yadav	XXXXXXX52H	M.Tech	HBTU, Kanpur	Dairy technology, food processing and preservation, storage engineering	02/08/2024	0.9	Assistant Professor	Assistant Professor		Contractual Fulltime	Yes
10	Dr Bineeta Singh	XXXXXXX09J	Ph.D	IIT, BHU	Chemical Engineering	10/06/2022	2.11	Assistant Professor	Assistant Professor		Regular	Yes

Table No.C2: Faculty details of Allied Departments for the past 3 years including CAY.

C2. Student-Faculty Ratio (SFR)

No. of UG(Engineering) programs in Department including allied departments/ clusters (UGn):
UG1=1st UG program
UGn=nth UG program
B= No. of Students in UG 2nd year (ST)
C= No. of Students in UG 3rd year (ST)
D= No. of Students in UG 4th year (ST)
No. of PG (Engineering) programs in Department including allied departments/ clusters (PGm):
PG1=1st PG program.
PGm=mth PG program
A= No. of Students in PG 1st year
B= No. of Students in PG 2nd year
Student Faculty Ratio **(SFR)** = S/F
S= No. of students of all programs in the Department including all students of allied departments/clusters.
No. of students (ST)=Sanctioned Intake (SA)+ Actual admitted students via lateral entry including leftover seats (L) if any (limited to 10 % of SA)
Students who admitted under supernumerary quotas (SNQ, EWS, etc) will not be considered in calculating SFR value. Those students are exempted.
F=Total no. of regular or contractual faculty members (Full Time) in the Department, including allied departments/clusters (excluding first year faculty (The faculty members who have a 100% teaching load in the first-year courses)).

No. of UG Programs in the Department1 No. of PG Programs in the Department1
Table No.C2.1: Student-faculty ratio.

Description	**CAY(2024-25)**	**CAYm1 (2023-24)**	**CAYm2 (2022-23)**
UG1.B	53	55	31
UG1.C	54	31	30
UG1.D	31	30	30
UG1: Food Technology	**138**	**116**	**91**
PG1.A	11	11	11
PG1.B	11	11	11
PG1: Food Technology	**22**	**22**	**22**
DS=Total no. of students in all UG and PG programs in the Department	160	138	113
AS=Total no. of students of all UG and PG programs in allied departments	0	0	0
S=Total no. of students in the Department (DS) and allied departments (AS)	**S1=** 160	**S2=** 138	**S3=** 113
DF=Total no. of faculty members in the Department	7	6	7
AF= Total no. of faculty members in the allied Departments	0	0	0
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	**F1=** 7	**F2=** 6	**F3=** 7
FF=The faculty members in F who have a 100% teaching load in the first-year courses	0	0	0
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 22.86**	**SFR2= 23.00**	**SFR3= 16.14**
Average SFR for 3 years	**SFR= 20.67**		

C3. Faculty Qualification

- Faculty qualification index (FQI) = 2.5 * [(10X +4Y)/RF] where
- X=No. of faculty members with Ph.D. degree or equivalent as per AICTE/UGC norms.
- Y=No. of faculty members with M. Tech. or ME degree or equivalent as per AICTE/ UGC norms.
- RF=No. of required faculty in the Department including allied Departments to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section C2 of this documents: (RF=S/20).

Table No.C3.1: Faculty qualification.

Year	X	Y	RF	FQ = 2.5 x [(10X + 4Y) / RF)]
2024-25(CAY)	4	3	7.00	18.57
2023-24(CAYm1)	5	1	6.00	22.50
2022-23(CAYm2)	6	1	5.00	32.00

C4. Faculty Cadre Proportion

- Faculty Cadre Proportion is 1(RF1): 2(RF2): 6(RF3)
- RF1= No. of Professors required = 1/9 * No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per C2 of this documents:.
- RF2= No. of Associate Professors required = 2/9 * No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per section C2 of this documents:.
- RF3= No. of Assistant Professors required = 6/9 * No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per section C2 of this documents:.
- Faculty cadre and qualification and experience should be as per AICTE/UGC norms.

Table No.C4.1: Faculty cadre proportion details.

Year	Professors		Associate Professors		Assistant Professors	
	Required RF1	Available AF1	Required RF2	Available AF1	Required RF3	Available AF3
2024-25	1.00	2.00	1.00	1.00	5.00	2.00
2023-24	1.00	2.00	1.00	1.00	4.00	2.00
2022-23	1.00	1.00	1.00	2.00	3.00	2.00
Average	RF1=1.00	AF1=1.67	RF2=1.00	AF2=1.33	RF2=4.00	AF2=2.00

C5. Visiting/Adjunct Faculty/Professor of Practice

Table No. C5.1: List of visiting/adjunct faculty/professor of practice and their teaching and practical loads.

(CAYm1)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. Dheeraj Mishra	Manager of Operations	Mondelez International	Project Mentorship	50.00
2	Mr. Sujeet Gupta	Principle Scientist	Dabur, Ghaziabad	Project Mentorship	50.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Anurag Mishra	Group Head, FSQA	Renuka Sugars, Karnataka	Project Mentorship	50.00
2	Dr. Lal Mani Verma	Process Engineer (Food Processing))	CSA University, Kanpur	Fundamentals of Food Science and Human Nutrition & Principles of Food Preservation	50.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. Lal Mani Verma	Process Engineer (Food Processing)	CSA University, Kanpur	Introduction to Food Technology & Food Microbiology	50.00
2	Prof. Gauri Shankar	Professor	HBTU, Kanpur	Food Biochemistry & Principles of Food Preservation	50.00

C6. Academic Research

Table No. C6.1: Faculty publication details.

S.No.	Item	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)
1	No. of peer reviewed journal papers published	32	40	17

2	No. of peer reviewed conference papers published	12	9	13
3	No. of books/book chapters published	13	14	12

C7. Sponsored Research Project

Table No. C7.1: List of sponsored research projects received from external agencies.

(CAYm1)

(CAYm2)

(CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Ranjna C Dutta	Prof. Alak K Singh (mentor)	Food Technology	Simplifying 3D cell culture for easy adaptation	DST	3 years	35.00
						Amount received (Rs.):35.00

Total Amount (Lacs) Received for the Past 3 Years: 35.00

Note*:

- Only sponsored research projects will be considered. Infrastructure-based projects will not be considered here.

C8. Consultancy Work

Table No. C8.1: List of consultancy projects received from external agencies.

(CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Prof. Alak Kumar Singh	Prof. Vivek Kumar/ Mr. Akshay Kr. Singh	Food Technology	Adequacy/ Testing & consultancy of various industries	Different types of food and allied industries	2023-24	3.35
						Amount received (Rs.):3.35

(CAYm2)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Prof. Alak Kumar Singh	Prof. Vivek Kumar/ Mr. Akshay Kr. Singh	Food Technology	Adequacy/ Testing & consultancy of various industries	Different types of food and allied industries	2022-23	6.48
						Amount received (Rs.):6.48

(CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Prof. Alak Kumar Singh	Prof. Vivek Kumar/ Mr. Akshay Kr. Singh	Food Technology	Adequacy/ Testing & consultancy of various industries	Different types of food and allied industries	2021-22	7.33
						Amount received (Rs.):7.33

Total amount (Lacs) received for the past 3 years: 17.16

Note*:

- Only consultancy projects will be considered. Infrastructure-based projects will not be considered here.

C9. Institution Seed Money or Internal Research Grant to its Faculty for Research Work

Table No. C9.1: List of faculty members received seed money or internal research grant from the Institution.

(CAYm1)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr. Anurag Singh	Research Activity	1 year	6.20	6.20	New Products were formulated and optimization was done
Prof. Vivek Kumar	Research Activity	1 year	4.20	4.20	Quality research work & Paper publications
Prof. Alak Kumar Singh	Research Activity	1 year	2.00	2.00	Research related activities were perfomred
			Amount received (Rs.): 12.40		

(CAYm2)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr. Anurag Singh	Research Acitivity	1 year	2.00	2.00	Quality research papers and new products were developed
Prof. Vivek Kumar	Research Activity	1 year	0.20	0.20	Research related works performed
			Amount received (Rs.): 2.20		

(CAYm3)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Prof. Vivek Kumar	Research Activity	1 year	0.20	0.20	Research Publications
			Amount received (Rs.): 0.20		

Total amount (Lacs) received for the past 3 years : 14.80

PART D: Laboratory Infrastructure in the Department

(Data to be filled in for the Department)

D1. Adequate and Well-Equipped Laboratories, and Technical Manpower

Table No.D1.1: List of laboratories and technical manpower.

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	UG LAB I (FOOD CHEMISTRY LAB + FOOD	5	1. Hot Air Dryer 2. Microwave 3. Incubator 4. Automatic Protein	08	1-Mr. Akshay	1-Research A	1-M.Sc. (Che
2	UG LAB II (FOOD SAFETY AND QUALITY cONTROL	5	1. Water Activity Meter 2. Incubator 3. Laminar Air Flow Cabinet 4.	04	1-Mr. Akshay	1-Research A	1-M.Sc. (Che
3	FOOD PROCESSING LAB	5	1. Homogenizer 2. Spray Dryer 3. Cheese VAT 4. Cheese Processing	12	1-Mr. Akshay	1-Research A	1-M.Sc. (Che
4	CENTRAL ADVANCED INSTRUMENTATION LAB	5	1. UV-VIS Spectrophotometer 2. Rotary Evaporator with Vacuum	12	1-Mr. Akshay	1-Research A	1-M.Sc. (Che

D2. Safety Measures in Laboratories

Table No. D2.1: List of various safety measures in laboratories.

Sr. No	Laboratory Name	Safety Measures
1	UG-I Lab (Food Chemistry Lab; Food Analysis Lab)	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid facilities. 3. Apron 4. Hand Gloves 5. Emergency contact number 6. Safety Glasses 7. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.

2	UG-II Lab (Food Safety and Quality Control lab; Technology of Animal and Milk Products Lab)	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid facilities. 3. Apron 4. Hand Gloves 5. Emergency contact number 6. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.
3	Food Processing Lab (UG-III)	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid facilities. 3. Apron 4. Hand Gloves 5. Emergency contact number 6. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.
4	PG Research Lab	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid facilities. 3. Apron 4. Hand Gloves 5. Emergency contact number 6. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.
5	Advance Research Lab	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid facilities. 3. Apron 4. Hand Gloves 5. Emergency contact number 6. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.
6	Central Advanced Instrumental Lab	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid facilities. 3. Apron 4. Hand Gloves 5. Emergency contact number 6. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.

D3. Project Laboratory/Research Laboratory

Research laboratories in the Department of Food Technology

The department of Food Technology is committed to conduct the cutting edge researches in latest fields. The UG, PG and Ph.D. students are provided with the best possible research environment in the department. The department has 02 laboratories dedicated to research projects, namely the PG Research Laboratory and the Advanced Research Laboratory. The equipment available in these labs are the utilization of labs in hours are given in the table 7.5.1.

Table 7.5.1 Research laboratories in the Department of Food Technology

Laboratory	Utilization in Hrs. per week	Equipment
PG research lab	24	1. Ohmic Heating System
		2. Hot Air Dryer
		3. Rotary Vacuum Evaporator
		4. Tray Drier
		5. Oil Screw Press
		6. Atomic Absorption Spectrophotometer
		7. Centrifuge
		8. IR Moisture Meter
		9. Deep Freezer
		10. Refrigerator
		11. Refractometer
		12. Automatic Floor Mountable Industrial Oven
Advance Research Lab	24	1. Probe Sonicator
		2. Rapid Visco Analyzer
		3. Microwave Extraction System
		4. Microwave Digestion System
		5. Colour Measuring System
		6. Hunter Lab Colorimeter
		7. IR Moisture Meter

The above-mentioned research laboratories have the latest scientific research equipment, chemicals for testing, glassware and other necessary facilities to conduct the research projects. The Department of Food Technology has 04 different laboratories as mentioned in Table 7.1. The UG students also use these laboratories, as and when required, for their research projects during the 7^{th} and 8^{th} semesters.

JVS Centre of Excellence in Bakery Technology

The department has recently established a JVS Centre of Excellence in Bakery Technology. The COE is equipped with the latest technological equipment for processing of various bakery products like cookies, cakes and breads. The CoE is also equipped with modern analytical testing equipment for testing the quality of raw material and finished bakery products. The students are now able to conduct their research projects related to bakery products with more precision and will be able to scale up the lab process using the pilot scale facility at the Centre of Excellence.

Utilisation and Outcome of the research facilities of the department

As an outcome of the utilisation of the research laboratories and other laboratories mentioned above, various research projects have been conducted by the UG and PG students of the department. The details of the projects undertaken in previous years are given in Table No. 7.5.2. Many of the research papers have been published/ presented as an outcome of the research conducted by the UG and PG students.

Table 7.5.2 Details of research project undertaken in previous years

B. Tech Project Session (2024-25)				
S. No.	**Roll No.**	**Name of the student**	**Topic of project**	**Name of the guide**

1.	210107001	Aastha Pandey	Horse Gram Based Hybrid Paneer	Ms. Aisha Rahman
2.	210107018	Subarna		
3.	210107003	Anant Pandey		
4.	210107002	Aishi Shukla	Formulation and analysis of multi pulse soup premix	Mr. Vipul Kumar
5.	210107014	Ritesh Patel		
6.	220007001	Aditya Trivedi		
7.	210107010	Kartik Diwakar	Establishing a bakery industry for preparation of bread, cookies and cakes	Dr. Anurag Singh
8.	210107005	Anshi Mishra		
9.	210107017	Sonali Singh		
10.	210107008	Divyanshi	Formulation of jelly bars using mulberry powder	Prof. (Dr.) Alak Kumar Singh
11.	210107006	Anubhav Mishra		
12.	210107012	Pranshu Sharma		
13.	210107007	Ayush Gautam	Preparation characterization and storage study (30 Days) of chia seed suspended	Dr. Arunima Singh
14.	210107013	Rishabh Mishra		
15.	210107021	Anushika Dubey		
16.	210107009	Kajol Jadon	Development of millet puffs and quality evaluation	Prof. (Dr.) Vivek Kumar
17.	210107016	Shreya Awasthi		
18.	210107011	Pragati Dubey		
19.	210107015	Shivam Bhashkar	Formulation and evaluation of high fibre cookies enriched with whole fruit pink guava powder	Mr. Vikas Yadav
20.	210107022	Pavitra raj		
21.	210107023	Ramji Bhadauriya		
B. Tech. Project Session (2023-24)				
1.	200107001	Ankit Kumar	Study on scum formation in relation to various milk type and time in tea beverage	Dr. Anit Kumar
2.	200107011	Ashutosh Kumar		
3.	200107020	Parth Tripathi		
4.	200107024	Sanjeet Kumar Yadav		
5.	200107018	Nidhi	Premix for millet-based beverage	Dr. Anurag Singh
6.	200107016	Mohd. Hamza		
7.	200107023	Rohit Kumar		
8.	200107002	Kartik Wadhwan		
9.	200107021	Pranjal Sachan		
10.	200107004	Amit Maurya	Enhancing the Quality of Millet Based Tongba Drink	Dr. Anit Kumar
11.	200107027	Shibhu Pathak		
12.	200107029	Swapnil Rastogi		
13.	200107038	Aman Yadav		
14.	200107039	Subhash Jain		

15.	200107032	Unnati Katiyar	Development and Optimisation of Millet based cake premix	Prof. (Dr.) Vivek Kumar
16.	200107026	Shagun TIwari		
17.	200107022	Rajesh Tiwari		
18.	200109020	Chetna Dubey		
19.	200107007	Aprajit Singh		
20.	200107009	Arpit Singh	Development of Sugar Free Jam Using Natural Sweetener	Prof. (Dr.) Alak Kumar Singh
21.	200107019	Parth Sarthi		
22.	200107014	Kartikey Singh		
23.	200107030	Tanish Tiwari		
24.	200107031	Ujjwal Rai		
25.	200107010	Ashlesha Verma	Oleogel as a replacer of cocoa butter in chocolate processing	Mr. Vipul Kumar
26.	200107013	Devanshi Mishra		
27.	200107025	Saumya Singh		
28.	200107015	Saumya Tripathi	To extract essential oils using different methods of extraction to increase the overall yield of the oils	Dr. Pankaj jha
29.	200107028	Shivangi Kshatriya		
30.	200107035	Sakshi		
31.	200107036	Shraddha Katiyar		
B. Tech. Project Session (2022-23)				
1.	190107033	Shruti Tiwari	Utilization of Spent Grain for Development of Healthy Noodles	Dr. Anurag Singh
2.	190107020	Komal		
3.	190107021	Mansi Chauhan		
4.	190107016	Ekta Garg		
5.	190107004	Akshay Kumar	Effects of Drying Methods on Quality of Sorghum Milk Powder	Prof. (Dr.) Vivek Kumar
6.	190107006	Aman Singh		
7.	190107011	Arushi Saxena		
8.	190107025	Raj Shekhar Singh		
9.	190107003	Akshat Purwar	Study on Health Benefits of Pearl Millet and Cookies Made from Pearl Millet Flour	Mr. Pankaj Jha
10.	190107028	Sanchipt Saran		
11.	190107029	Satya Prakash Singh		
12.	190107032	Shashank Pal		
13.	190107002	Akanksha Singh	Extraction of Essential Oil from Orange Peel and its Utilization in the Manufacture of Synthetic Squash	Prof. (Dr.) Alak Kumar Singh
14.	190107034	Sonakshi Patel		
15.	190107036	Vikas Rajput		
16.	190107033	Tushar Pandey		
17.	190107005	Anand Awasthi	Study on Optimization of Pizza Base by the Addition of Millet Flour	Dr. Alak Kumar Singh
18.	190107022	Mohd Owais		
19.	190107023	Prachi Pal		
20.	190107027	Sakshi Shukla		

21.	190107012	Ashish Gupta	Study on Improvement of Textural Properties of Tofu Using Xanthan Gum	Mr. Vipul Kumar
22.	190103008	Divyansh Trivedi		
23.	190107019	Keshav Rajput		
24.	190107037	Vishwas Seth		
25.	190107009	Anant Mishra	Characterization and Optimization of Millet Milk Powder	Dr. Anurag Singh
26.	190107023	Piyush Mishra		
27.	190101035	Sumit Srivastava		
28.	190107038	Yatendra Chauhan		
29.	190107014	Ayushi Srivastava	Study on Shelf Life of Carissa Jam and its Nutritional Properties	Mr. Pankaj Jha
30.	190107018	Isha Gupta		
31.	190109012	Krishna Pooja Yadav		
32.	190109022	Swadesh Soni		
33.	190107005	Aman Kumar	Study on Reduction on Oil Absorption During frying of Besan Namkeen	Mr. Vipul Kumar
34.	190107015	Deepak Mishra		
35.	190107035	Tanisha Gupta		
36.	190107008	Anand Umrao	Study of Osmosis Dehydration of Pumpkin Cubes	Prof. (Dr.) Vivek Kumar
37.	190107013	Ayush Lakshakar		
38.	190107024	Praveen Kumar Patel		
39.	190107026	Rochak Sachan		
M. Tech Project Session (2023-24)				
1.	220207001	Anuska Gupta	Effects of beeswax-based emulsion coating on the post-harvest quality of amla fruits	Prof. (Dr.) Vivek Kumar
2.	220207002	Bhupendra Kumar	Studies on effect of mustard oil oleogel on the quality of fried snacks	Dr. Anurag Singh
3.	220207003	Dhainendra Bahadur Singh	Extraction of bioactives from Bitter Gourd	Mr. Vipul Kumar
4.	220207004	Harsh Gangwar	Study on preparation and quality assessment of low calories biscuits fortified with millet	Prof. (Dr.) Alak Kumar Singh
M. Tech Project Session (2022-23)				
1.	210207001	Ayushi Singh	Development of soy protein based oleogel functionally enriched with essential basil oil	Dr. Anurag Singh
2.	210207002	Dharmedra Yadav	Study On Development and Characterisation of Cookies Made Using Millet, Greengram and Refined Wheat Flour Fortified With Gurmar	Prof. Alak Kumar Singh

3.	210207003	Pragati Srivastava	Study on the incorporation of bitter gourd juice (Momordica Charantia) in Aam Pana and determining its antimicrobial activity	Mr. Vipul Kumar
4.	210207004	Ruby Singh	Influence of hybrid foam mat drying on quality of tomato pulp powder	Prof. (Dr.) Vivek Kumar
5.	210207005	Shubhi Dwivedi	Influence of osmotic dehydration and ultrasound assisted osmotic dehydration on drying kinetics of pumpkin cubes and quality of resulted flour	Prof. (Dr.) Vivek Kumar
6.	210207006	Sindhuja Singh	Physicochemical characterization and oil extraction from custard apple (*Annona Squamosa*) seeds	Dr. Anurag Singh
7.	210207007	Sumaiya Fatima	Development Of Wax Based Pumpkin Seed Oil Oleogels	Prof. (Dr.) Vivek Kumar

PART E: First Year faculty and financial Resources

(Data to be filled in for the first year course faculty and budget allocation and utilization)

E1. First Year Student-Faculty Ratio (FYSFR)

Table No. E1.1: FYSFR details.

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members ((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4)); Percentage= ((NS1*0.8) + (NS2*0.2))/RF
2022-23(CAYm2)	645	32	12	13	38
2023-24(CAYm1)	645	32	13	21	46
2024-25(CAY)	645	32	19	35	69

E2. Budget Allocation, Utilization, and Public Accounting at Institute Level

Table No. E2.1: Budget and actual expenditure incurred at Institute level.

Items	Budgeted in 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Infrastructure Built-Up	1279.52	1267.74	641.38	64138	500	163.04	2618.02	2001.57
Library	50	28.14	146	76.79	100.92	70.19	20	4.31
Laboratory equipment	300	213.03	500	104.79	500	163.04	200	27.80
Teaching and non-teaching staff	5408.06	4579.02	5163	2654.37	4982	4135.14	3534.46	2911.87
Outreach Programs	0	0	0	0	0	0	0	0
R&D	100	22.95	102.40	48.09	116.38	54.70	121	30.91
Training, Placement and	75	32.12	90	70.97	90	25.66	30	8.41

SDGs	0	0	0	0	0	0	0	0
Entrepreneurship	0	0	0	0	0	0	0	0
Others, specify	550	532.21	300	246.64	250	236.42	207	171.17
Total	**7762.58**	**6675.21**	**6942.78**	**67339.65**	**6539.30**	**4848.19**	**6730.48**	**5156.04**

E3. Budget Allocation, Utilization, and Public Accounting at Program Specific Level

Table No. E3.1: Budget and actual expenditure incurred at program level.

Items	**Budgeted in 2024-2025**	**Actual Expenses in 2024-2025 till**	**Budgeted in 2023-2024**	**Actual Expenses in 2023-2024 till**	**Budgeted in 2022-2023**	**Actual Expenses in 2022-2023 till**	**Budgeted in 2021-2022**	**Actual Expenses in 2021-2022 till**
Laboratory equipment	900000	841468	700000	494009	500000	246500	400000	0
Software	600000	459899	500000	12500	500000	12446	300000	0
SDGs	0	0	0	0	0	0	0	0
Support for faculty development	0	0	0	0	0	0	0	0
R & D	600000	104871	300000	37946	250000	19293	150000	0
Industrial Training, Industry expert,	0	0	162180	0	0	0	0	0
Miscellaneous Expenses*	1000000	779931	500000	214063	400000	131753	250000	22626
Total	**3100000**	**2186169**	**2162180**	**758518**	**1650000**	**409992**	**1100000**	**22626**