NATIONAL BOARD OF ACCREDITATION

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

Program Name : Oil Technology	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 11176	**Date of Submission**: 08-11-2025

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
Oil Technology	No	Oil Technology	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	Oil Technology	UG	1921 / --	30	Yes	2022	51	2022	F.No. Northern/ 44643637092/2 Dated 20-Mar-2

Sanctioned Intake for Last Five Years for the Chemical Technology	
Academic Year	**Sanctioned Intake**
2025-26	51
2024-25	51
2023-24	51
2022-23	51
2021-22	30
2020-21	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 :	Dr. Neeraj Praphulla Awasthi
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)	2025-26 (CAY)	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)	2021-22 (CAYm4)	2020-21 (CAYm5)	2019-20 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	51	51	51	51	51	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	51	51	51	4	51	30	30
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	2	3	2	1	0	0

N3=Separate division if any	0	0	0	0	0	0	2
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	9	10	8	0	2	9	7
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	60	63	62	6	54	39	39

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]
2025-26 (CAY)	51	51	9	117.65
2024-25 (CAYm1)	51	51	10	119.61
2023-24 (CAYm2)	51	51	8	115.69

Average [(ER1 + ER2 + ER3) / 3] = 117.65≡ 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	(2021-22) LYG	(2020-21) LYGm1	(2019-20) 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).	52.00	41.00	38.00
B=No. of students who graduated from the program in the stipulated course duration	45.00	30.00	35.00
Success Rate (SR)= (B/A) * 100	86.54	73.17	92.11

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 83.94

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(2024-25)	CAYm2(2023-24)	CAYm3 (2022-23)
Mean of CGPA or mean percentage of all successful students(X)	7.10	6.50	6.30
Y=Total no. of successful students	57.00	56.00	3.00
Z=Total no. of students appeared in the examination	61.00	60.00	3.00
API [X*(Y/Z)]	6.63	6.07	6.30

Average API[(AP1+AP2+AP3)/3] : 6.33

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 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
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)	6.30	5.08	6.73
Y=Total no. of successful students	50.00	5.00	47.00
Z=Total no. of students appeared in the examination	59.00	5.00	53.00
API [X * (Y/Z)]	5.34	5.08	5.97

Average API [(AP1 + AP2 + AP3)/3] : 5.46

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 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
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)	4.98	6.50	6.40
Y=Total no. of successful students	5.00	45.00	30.00
Z=Total no. of students appeared in the examination	5.00	47.00	30.00
API [X*(Y/Z)]:	4.98	6.22	6.40

Average API [(AP1 + AP2 + AP3)/3] : 5.87

B9. Placement, Higher Studies, and Entrepreneurship

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

Item	LYG (2021-22)	LYGm1(2020-21)	LYGm2(2019-20)
FS*=Total no. of final year students	52.00	30.00	37.00
X=No. of students placed	42.00	26.00	26.00
Y=No. of students admitted to higher studies	1.00	2.00	0.00
Z= No. of students taking up entrepreneurship	2.00	1.00	5.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	86.54	96.67	83.78

Average Placement Index = (P_1 + P_2 + P_3)/3: 89.00 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)	Current Associa (Y/N)
1	Dr. Praveen Kumar Singh Yadav	XXXXXXX98A	Ph.D	Gautam Buddha Technical University	Alternate Fuel, Soaps & Surfactants	31/01/2003	22.9	Lecturer	Professor	31/01/2019	Regular	Yes
2	Dr. Neeraj Praphulla Awasthi	XXXXXXX74E	Ph.D	Gautam Buddha Technical University	Oleochemical	05/04/2024	1.7	Associate Professor	Associate Professor	05/04/2024	Regular	Yes
3	Dr. Vineeta Gautam	XXXXXXX44N	Ph.D	IIT BHU	Conducting Polymer & Biosensors	09/06/2022	3.5	Assistant Professor	Assistant Professor		Regular	Yes
4	Mr. Gaurav Singh	XXXXXXX24N	M.Tech	HBTU	Oleochemical	10/06/2022	3.4	Assistant Professor	Assistant Professor		Regular	Yes
5	Mr. Sanjay Kumar Singh	XXXXXXX03G	M.Tech	IIT Bombay	Green Surfactants, Green Fuel, Waste Management, Waste to Energy, Refining	12/10/2023	2	Assistant Professor	Assistant Professor		Regular	Yes
6	Mr. Sameer Singh	XXXXXXX55G	M.Tech		Oleochemical	03/08/2023	2.3	Assistant Professor	Assistant Professor		Contractual Fulltime	Yes
7	Nandita Mishra	XXXXXXX59K	M.Tech		Surfactants, Commerce and Economics of Vegetable Oils.	18/07/2025	0.3	Assistant Professor	Assistant Professor		Contractual Fulltime	Yes
8	Dr. R. K. Trivedi	XXXXXXX57L	Ph.D	Kanpur University	Oil Technology	02/12/1985	38.8	Professor	Professor	30/08/2003	Contractual Fulltime	No
9	Dr. Ashwani Kumar Rathore	XXXXXXX07N	Ph.D	Maulana Azad National Institute of Technology, Bhopal	Synthesis of Carbon nanotubes from plastics and its applications, Reactive extraction, Catalysis	07/02/2003	22.9	Lecturer	Professor	03/03/2020	Regular	Yes

10	Dr. Pranava Chaudhari	XXXXXXX76J	Ph.D	IIT Kanpur	Modeling & Optimization	10/06/2022	3.4	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(2025-26)**	**CAYm1 (2024-25)**	**CAYm2 (2023-24)**
UG1.B	53	54	53
UG1.C	54	53	30
UG1.D	53	30	30
UG1: Oil Technology	**160**	**137**	**113**
PG1.A	11	11	11
PG1.B	11	11	11
PG1: Chemical Technology	**22**	**22**	**22**
DS=Total no. of students in all UG and PG programs in the Department	182	159	135
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=** 182	**S2=** 159	**S3=** 135
DF=Total no. of faculty members in the Department	9	8	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=** 9	**F2=** 8	**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= 20.22**	**SFR2= 19.88**	**SFR3= 19.29**
Average SFR for 3 years	**SFR= 19.80**		

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)]**
2025-26(CAY)	5	4	9.00	18.33
2024-25(CAYm1)	5	3	7.00	22.14
2023-24(CAYm2)	5	2	6.00	24.17

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
2025-26	1.00	2.00	2.00	1.00	6.00	4.00
2024-25	1.00	2.00	1.00	1.00	5.00	4.00
2023-24	1.00	2.00	1.00	0.00	4.00	3.00
Average	RF1=1.00	AF1=2.00	RF2=1.33	AF2=0.67	RF2=5.00	AF2=3.67

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. R. P. Singh	Retired Professor	HBTU, Kanpur	Refining of oils	20.00
2	Dr. R. K. Trivedi	Retired Professor	HBTU, Kanpur	Soaps and Synthetic Detergents	20.00
3	Mr. Saurabh Srivastava	Senior Manager Marketing	Novonesis (Formerly known as Novozymes)	Applications of Enzyme in Household Care Industries	10.00
4	Dr. R. P. Singh	Retired Professor	HBTU, Kanpur	Hydrogenation of oils	20.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. R. P. Singh	Retired Professor	HBTU, Kanpur	Refining of oils	20.00
2	Dr. R. P. Singh	Retired Professor	HBTU, Kanpur	Hydrogenation of oils	10.00
3	Mr. Sanjay Tandon	Sr. Vice President	N&T Engitech Pvt. Ltd.	Expression & Extraction Technique of Oil Bearing Materials	10.00
4	Mr. Saurabh Srivastava	Sr. Industry Technology Specialist -India & Middle East	Novonesis (Formerly known as Novozymes)	Technology of Soaps & Fat Splitting	10.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. Ashutosh Yadav	Assistant professor	IIT JAMMU	simulation and modelling	10.00
2	Mr. Sanjay Tandon	Sr. Vice President	N&T Engitech Pvt. Ltd.	Expression & Extraction Technique of Oil Bearing Materials	10.00
3	Prof. R. P. Singh	Retired Professor	HBTU, Kanpur	Refining of oils	20.00
4	Mr. Saurabh Srivastava	Sr. Industry Technology Specialist -India & Middle East	Novonesis (Formerly known as Novozymes)	Technology of Soaps & Fat Splitting	10.00

C6. Academic Research

Table No. C6.1: Faculty publication details.

S.No.	Item	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
1	No. of peer reviewed journal papers published	17	9	11
2	No. of peer reviewed conference papers published	5	9	7
3	No. of books/book chapters published	6	4	4

C7. Sponsored Research Project

Table No. C7.1: List of sponsored research 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
Dr. P. K. S. Yadav	Mr. Sanjay Kumar Singh, Dr Sushmita Singh	Oil Technology	Comparative Study on the effect of Palm Oil and other major cooking oils used in India on cholesterol metabolism	MPOC - OTAI	06 Months	12.50
Dr. P. K. S. Yadav	Dr Neeraj P Awasthi Mr. Sanjay Kumar Singh	Oil Technology	Characterization and pretreatment of camelina oil for quality optimization for HEPA process	DRDO	10 Months	9.50
						Amount received (Rs.):22.00

(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
Dr. Deepak Srivastava	Dr. A. K. Rathore	Plastic Technology	Development of carbon nanotubes and graphene oxide from plastic waste for multifarious application	UP CST	36 Months	11.94
						Amount received (Rs.):11.94

(CAYm3)

Total Amount (Lacs) Received for the Past 3 Years: 33.94

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
Dr. P. K. S. Yadav	Mr. Sanjay Kumar Singh	Oil Technology Department	Expert Opinion on Optimization of Process Conditions for Neem Oil Extraction	Pooja Solvent Pvt. Ltd.	30 Days	3.00
Dr. P. K. S. Yadav	Dr. Neeraj P. Awasthi	Oil Technology Department	Expert Opinion for Losses in Production of Proprietary Foods	Tapan Agro Pvt. Ltd. Agra	14 Days	0.50
Dr. P. K. S. Yadav	Dr. Neeraj P. Awasthi	Oil Technology Department	Expert Opinion for Variation of Chemicals and Energy Consumption for Vegetable Oil Processing	Mantora Oil Products Pvt. Ltd.	7 Days	0.25
Dr. P. K. S. Yadav	Dr. Neeraj P. Awasthi, Mr. Sanjay Kumar Singh	Oil Technology Department	Stability of Oils on frying	Adani Wilmar Ltd.	30 Days	1.25
						Amount received (Rs.):5.00

(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
Dr. P. K. S. Yadav	-	Oil Technology Department	Expert Opinion for dosage of bleaching earth for bleaching of different oils and fats	Kanpur Edibles Pvt. Ltd.	14 Days	0.50
Dr. P. K. S. Yadav	-	Oil Technology Department	Identification of Route Cause for the Damage of Soybean Seeds in Silo	Adani Wilmar Ltd.	30 Days	3.00
						Amount received (Rs.):3.50

(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
Dr. P. K. S. Yadav	-	Oil Technology Department	Expert Opinion about Safe Storage Condition for Soybean Seeds	Adani Wilmar Ltd.	7 Days	0.25
						Amount received (Rs.):0.25

Total amount (Lacs) received for the past 3 years: 8.75

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
Mr Sanjay Kumar Singh	Study of medicinal properties of Basil Leaves essential oil	06 Months	1.17	1.17	Hands on practice of group of students
Mr. Sanjay Kumar Singh	Study of Synthetic vegetable oils and natural vegetable oils	06	2.46	2.46	Coparive analysis in terms of oxidative and storage stability of both oils. Nutritional profiles were also studied
Dr. P.K.S. Yadav & Mr. Sanjay Kr Singh	Production Green Surfactants	12	0.41	0.41	Bio-surfactant was synthesized.
Dr Pranava Chaudhari	For designing fumeless chulha	6 Months	0.16	0.16	Design skills, sustainable thinking, teamwork, innovation, problem-solving, community health awareness
Prof. A.K.Rathore	Reactive extraction of acrylic acid	2 DAYS	0.47	0.47	project of B.Tech students Reactive extraction of acrylic acid
Prof. A.K.Rathore	Registration of CHEMTECNOVA	3 DAYS	0.20	0.20	Registration fee
Prof. A.K.Rathore	Registration of CHEMTECNOVA	3 days	0.10	0.10	registration of CHEMTECNOVA
Prof. A.K.Rathore	Registration of CHEMTECNOVA	3 days	0.10	0.10	registration of CHEMTECNOVA
Dr. Vineeta Gautam	Registration of STTP	5 days	0.12	0.12	STTP attended
Dr. Vineeta Gautam	Commercial Food Grade Surfactants Development from Edible Oil	1 day	0.50	0.50	Commercial Food Grade Surfactants Development from Edible Oil
Dr. Vineeta Gautam	Carbon Capture and Storage	1 day	0.50	0.50	Carbon Capture and Storage
Dr. Vineeta Gautam	Registration fee National conference in the department of Chemistry	2 days	0.25	0.25	Paper presentation
			Amount received (Rs.): 6.44		

(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
Prof. A.K. Rathore	Urja Sangam	3 days	0.40	0.40	Advancement in energy
Prof. A.K. Rathore	Characterization of the samples	2 days	0.20	0.20	Carbon applications in composites
Dr. P.K.S. Yadav	BIS CHD 25	3 days	0.30	0.30	As a panel expert for a session of sustainable cleaning initative
Dr. Vineeta Gautam	Artificial Intelligence for Chemical Engineering Applications	1 day	0.50	0.50	Artificial Intelligence for Chemical Engineering Applications
			Amount received (Rs.): 1.40		

(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
Dr. Vineeta Gautam	CHEMCON Registration fee	3 days	0.30	0.30	Paper presentation
Dr. Vineeta Gautam	IICHE Registration	1 day	0.83	0.83	IICHE Registration
Mr. Gaurav Singh	IICHE Registration	1 day	0.83	0.83	IICHE Registration
Mr. Gaurav Singh	CHEMCON Registration fee	3 days	0.30	0.30	Paper presentation
Mr. Gaurav Singh	OTAI Life time membership	1 day	0.12	0.12	Registration of OTAI Memebership
Smriti Dwedi	CHEMCON Registration fee	3 days	0.30	0.30	Paper presentation
Smriti Dwedi	OTAI Conference registration fee	2 days	0.47	0.47	Paper presentation
Prof. P. K. S. Yadav	Invited talk deliver ICVO 2023	5 days	0.13	0.13	Invited talk
Prof. P. K. S. Yadav	MoU with FARELABS	1 day	0.50	0.50	Joint coordination
			Amount received (Rs.): 3.78		

Total amount (Lacs) received for the past 3 years : 11.62

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 Laboratory	30	Tergometer, Laundrometer, Lovibond, Tintometer, Refractrometer Soxhlet Apparatus	8 hrs	Mr. Ashutosh	Research Ass	M. Sc. In Che
2	PG LAB	11	Acid Digestion Vessel, Hot Air Oven, Oil Heater, Vacuum Pump, Refrigerated centrifuge with LCD	12 hrs	Mr. Ashutosh	Research Ass	M. Sc. In Che
3	Project Lab	5	Flash Point Apparatus, Karl Fisher, Fluorescence Spectrophotometer, Surface Tensiometer, Polari-meter	4 hrs	Mr. Ashutosh	Research Ass	M. Sc. In Che
4	Processing Lab	5	Pilot Plant for refining of vegetable oil, Pilot plant for soap manufacturing, Pilot Plant for	20 hrs	Mr. Ashutosh	Research Ass	M. Sc. In Che
5	Advance Surfactants Lab	5	UV-Vis spectrophotometer, Multi-fuel Analyzer, FT- IR, Analytical Balance, Class-O-meter Differential	20 hrs	Mr. Ashutosh	Research Ass	M. Sc. In 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 Laboratory	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid kits. 3. Mandatory use of PPE (lab coats, gloves, goggles) 4. Emergency contact number 5. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.
2	PG Laboratory	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid kits. 3. Mandatory use of PPE (lab coats, gloves, goggles) 4. Emergency contact number 5. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.

3	Processing Laboratory	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid kits. 3. Mandatory use of PPE (lab coats, gloves, goggles) 4. Emergency contact number 5. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.
4	Advanced Surfactant Laboratory	1.Fire extinguishers are placed at strategic location in the department/labs. 2. First aid kits. 3. Mandatory use of PPE (lab coats, gloves, goggles) 4. Emergency contact number 5. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab. 6. UPS-backed power supply to ensure safe shutdown of equipment
5	Project Laboratory	1. Fire extinguishers are placed at strategic location in the department/labs. 2. First aid kits. 3. Mandatory use of PPE (lab coats, gloves, goggles) 4. Emergency contact number 5. Safety rules, emergency procedures, and SOPs for equipment displayed in the lab.

D3. Project Laboratory/Research Laboratory

The Advanced Surfactant Laboratory is a specialized facility established to support research, innovation, Centre of Excellence activities, and startup-oriented product development in the areas of surfactant science, formulation development, material characterization, and thermal and surface analysis. The laboratory is equipped with state-of-the-art analytical and testing instruments that enable both fundamental and applied research.

Laboratory Infrastructure and Equipment

The laboratory is furnished with advanced instruments that facilitate precise analysis of chemical, thermal, surface, and rheological properties of surfactants and related materials. The major equipment available includes:

- FT-IR Spectrophotometer – Used for functional group identification and molecular structure analysis of surfactants and formulations.
- Bomb Calorimeter – Enables accurate measurement of calorific values and energy content of materials.
- SFC/UHPLC System – Supports high-resolution separation, identification, and quantification of chemical components.
- GC-MS (Gas Chromatography–Mass Spectrometry) – Used for qualitative and quantitative analysis of complex mixtures and impurity profiling.
- UV–Spectrophotometer – Facilitates concentration analysis and reaction monitoring using absorbance measurements.
- Lovibond Tintometer – Used for color measurement and quality control of liquid and solid samples.
- Surface Tensiometer – Enables measurement of surface and interfacial tension, a critical parameter in surfactant research.
- Multi-Fuel Analyzer – Supports analysis of fuel composition and performance characteristics.
- Rheometer – Used to study flow behavior, viscosity, and viscoelastic properties of surfactant solutions and formulations.
- Differential Scanning Calorimetry (DSC) – Enables thermal transition analysis such as melting, crystallization, and phase changes.
- Thermal Gravimetric Analyzer (TGA) – Used for thermal stability and decomposition studies.
- Fluorescence Spectrometer – Supports molecular interaction studies and trace-level detection.

Support for Projects and Research

The Advanced Surfactant Laboratory provides comprehensive support for:

- Undergraduate and postgraduate student projects
- Doctoral and faculty research
- Sponsored and industry-collaborative research

Students and researchers utilize the laboratory for material characterization, formulation optimization, performance evaluation, and data-driven analysis, contributing to high-quality research outputs, technical reports, and publications.

Role in Centre of Excellence Activities

As a core facility under the Centre of Excellence, the laboratory enables:

- Hands-on training in advanced analytical techniques
- Skill development programs aligned with industry needs
- Workshops, certification courses, and expert lectures
- Collaborative research with academic and industrial partners

The laboratory bridges theoretical knowledge with practical experimentation, strengthening the objectives of the Centre of Excellence.

Contribution to Innovation and Startups

The laboratory actively supports innovation and entrepreneurial activities by providing infrastructure for:

- Proof-of-concept development
- Prototype formulation and testing
- Product validation and quality assessment
- Startup incubation and mentoring support

Access to advanced instrumentation allows innovators and startups to develop market-ready, high-performance, and sustainable surfactant-based products.

Outcomes and Impact

The Advanced Surfactant Laboratory has significantly contributed to:

- High-quality student and faculty research
- Industry-relevant product development
- Innovation-driven projects and startup ideas
- Enhanced technical competency and employability

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
2023-24(CAYm2)	645	32	14	8	40
2024-25(CAYm1)	645	32	20	20	62
2025-26(CAY)	645	32	23	32	78

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	1700	1600.2	1279.52	1267.74	641.38	641.38	500	163.04
Library	100	3.86	50	28.14	146	76.79	100.92	70.19
Laboratory equipment	700	429.85	300	213.03	500	104.79	500	163.04
Teaching and non-teaching staff	6178.31	3551.74	5408.06	4579.02	5163	2654.37	4982	4135.14
Outreach Programs	15	3.32	0	0	0	0	0	0
R&D	100	18.42	100	22.95	102.40	48.09	116.38	54.70
Training, Placement and	110	61.35	75	32.12	90	70.97	90	25.66
SDGs	3	3	0	0	0	0	0	0
Entrepreneurship	6.5	5	0	0	0	0	0	0
Others, specify	1425	900.95	550	532.21	300	246.64	250	236.42
Total	**10337.81**	**6577.69**	**7762.58**	**6675.21**	**6942.78**	**3843.03**	**6539.30**	**4848.19**

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	1300000	460541	1300000	120624	1100000	173507	800000	40143
Software	600000	0	500000	0	400000	0	400000	0
SDGs	100000	30000	0	0	0	0	0	0
Support for faculty development	500000	100000	50000	30000	50000	30000	50000	10000
R & D	400000	53038	600000	71939	300000	15000	250000	250000
Industrial Training, Industry expert,	450000	21300	400000	26180	150000	61023	100000	61413
Miscellaneous Expenses*	150000	31670	150000	15045	200000	42950	200000	2089
Total	**3500000**	**696549**	**3000000**	**263788**	**2200000**	**322480**	**1800000**	**363645**