NATIONAL BOARD OF ACCREDITATION

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

Program Name : Chemical Engineering	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 10495	**Date of Submission**: 17-04-2025

PART A- Profile of the Institute

A1.Name of the Institute: VEL TECH HIGH TECH DR. RANGARAJAN DR. SAKUNTHALA ENGINEERING COLLEGE	
Year of Establishment : 2002	Location of the Institute: Avadi
A2. Institute Address:No. 60, Avadi-Veltech Road, Avadi, Chennai	
City:Chennai	State:Tamil Nadu
Pin Code:600062	Website:www.velhightech.com
Email:principal@velhightech.com	Phone No(with STD Code):044-26840113
A3. Name and Address of the Affiliating University (if any):	
Name of the University : Anna University	City: Tiruvallur
State : Tamil Nadu	Pin Code: 0
A4. Type of the Institution: Self-Supported Institute	
A5. Ownership Status: Self financing	

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

- No. of UG programs: **9**
- No. of PG programs: **2**

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	Artificial Intelligence and Data Science	2020	--	Artificial Intelligence and Data Science
2	Engineering & Technology	UG	Biotechnology	2006	--	Biotechnology
3	Engineering & Technology	UG	Chemical Engineering	2002	--	Chemical Engineering
4	Engineering & Technology	UG	Civil Engineering	2002	--	Civil Engineering
5	Engineering & Technology	UG	Computer Science and Engineering	2005	--	Computer Science and Engineering
6	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence & Machine Learning)	2022	--	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
7	Engineering & Technology	UG	Electronics & Communication Engineering	2002	--	Electronics and Communication Engineering
8	Engineering & Technology	UG	Information Technology	2006	--	Information Technology
9	Engineering & Technology	UG	Mechanical Engineering	2009	--	Mechanical Engineering

10	Engineering & Technology	PG	Structural Engineering	2011	--	Civil Engineering
11	Management	PG	Masters in Business Administration	2006	--	Management

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
Chemical Engineering	No	Chemical Engineering	UG
Biotechnology	No	Biotechnology	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/COMPETENT AUTHORITY ARROVAL DETAILS	ACCREDITATION STATUS	FROM	TO	NO. OF TIMES PROGRAM ACCREDITED	PROGRAM DURATION
1	Chemical Engineering	UG	2002 / --	60	No	NA	60	2002	F.NO. Southern/1-43663938704/2024/EOA : 22.05.24	Granted accreditation for 3 years for the period (specify period)	2022	2025	1	4

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 :	J.B. Veeramalini
B. Nature of appointment:	Regular
C. Qualification:	ME/M. Tech and PhD

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)	60	60	60	60	60	60	60

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	53	53	38	38	26	47	37
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	6	3	2	3	2	6
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	0	0	0	0	0	0	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	53	59	41	40	29	49	43

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)	60	53	0	88.33
2023-24 (CAYm1)	60	53	0	88.33
2022-23 (CAYm2)	60	38	0	63.33

Average [(ER1 + ER2 + ER3) / 3] = 80.00≡ 17.00

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).	29.00	49.00	43.00
B=No. of students who graduated from the program in the stipulated course duration	28.00	49.00	43.00
Success Rate (SR)= (B/A) * 100	96.55	100.00	100.00

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 98.85

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)
Mean of CGPA or mean percentage of all successful students(X)	0.00	0.00	0.00
Y=Total no. of successful students	0.00	0.00	0.00
Z=Total no. of students appeared in the examination	0.00	0.00	0.00

Average API[(AP1+AP2+AP3)/3] : 0.00

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)	7.63	7.20	8.64
Y=Total no. of successful students	41.00	40.00	29.00
Z=Total no. of students appeared in the examination	41.00	40.00	29.00
API [X * (Y/Z)]	7.63	7.20	8.64

Average API [(AP1 + AP2 + AP3)/3] : 7.82

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)	7.37	8.52	8.58
Y=Total no. of successful students	40.00	29.00	49.00
Z=Total no. of students appeared in the examination	40.00	29.00	49.00
API [X*(Y/Z)]:	7.37	8.52	8.58

Average API [(AP1 + AP2 + AP3)/3] : 8.16

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	63.00	62.00	66.00
X=No. of students placed	28.00	39.00	35.00
Y=No. of students admitted to higher studies	0.00	6.00	1.00
Z=Total no. of students appeared in the examination	0.00	0.00	0.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	44.44	72.58	54.55

Average Placement Index = (P_1 + P_2 + P_3)/3: 57.19 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 Associated (Y/N)**	**In case of NO, Date of Leaving**	**IS HOD?**
1	B. Bharathiraja	XXXXXXX01J	ME/M. Tech and PhD	Anna University	Biochemical Engineering	01/06/2012	12.10	Assistant Professor	Professor	15/02/2016	Regular	Yes		No

2	J.B. Veeramalini	XXXXXXX05H	ME/M. Tech and PhD	Anna University	Electrochemical, Waste water, Treatment, Drug Discovery	04/06/2018	6.10	Assistant Professor	Associate Professor	26/09/2020	Regular	Yes		Yes
3	A. Saravana Raj	XXXXXXX85F	ME/M. Tech and PhD	Anna University	Fluid Flow Operations, Process Calculations	21/02/2011	14.1	Assistant Professor	Associate Professor	26/04/2024	Regular	Yes		No
4	P. Vinosh Muthukumar	XXXXXXX19H	M.E/M.Tech	Anna University	Chemical Engineering	21/12/2011	13.3	Assistant Professor	Assistant Professor		Regular	Yes		No
5	M. Janani	XXXXXXX14J	M.E/M.Tech	Anna University	Chemical Engineering	16/07/2021	3.9	Assistant Professor	Assistant Professor		Regular	Yes		No
6	S. Sunitha	XXXXXXX76M	M.E/M.Tech	Anna University	Chemical Engineering	25/02/2022	3.1	Assistant Professor	Assistant Professor		Regular	Yes		No
7	V. Dinesh	XXXXXXX05Q	M.E/M.Tech	Anna University	Chemical Engineering	31/08/2023	1.7	Assistant Professor	Assistant Professor		Regular	Yes		No
8	S. Subathra	XXXXXXX08F	M.E/M.Tech	Annamalai University	Industrial Biotechnology	15/07/2024	0.8	Assistant Professor	Assistant Professor		Regular	Yes		No
9	B. Manjupriya	XXXXXXX28D	M.E/M.Tech	Anna University	Bio-Pharma	06/08/2020	4.7	Assistant Professor	Assistant Professor		Regular	Yes		No
10	Gayathri Devi P	XXXXXXX60D	M.E/M.Tech	Anna University	Chemical Engineering	26/06/2023	0.10	Assistant Professor	Assistant Professor		Regular	No	24/05/2024	No
11	R Mary Nancy Flora	XXXXXXX26N	ME/M. Tech and PhD	ANNA UNIVERSITY	Chemical Engineering	28/11/2024	0.4	Assistant Professor	Assistant Professor		Regular	Yes		No
12	Karpagam V	XXXXXXX60R	M.E/M.Tech	Anna University	Chemical Engineering	22/08/2022	0.8	Assistant Professor	Assistant Professor		Regular	No	05/05/2023	No
13	Yuvasri N U	XXXXXXX80C	M.E/M.Tech	ANNA UNIVERSITY	CHEMICAL ENGINEERING	26/08/2022	2.8	Assistant Professor	Assistant Professor		Regular	No	23/05/2024	No
14	P Bharani	XXXXXXX40L	M.Tech	Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology	Environmental Engineering	02/03/2020	3.6	Assistant Professor	Assistant Professor		Regular	No	30/09/2023	No
15	R Ramya	XXXXXXX38Q	M.E/M.Tech	Anna University	Chemical Engineering	16/07/2021	3.9	Assistant Professor	Assistant Professor		Regular	Yes		No
16	P L Sivayogavalli	XXXXXXX66C	M.E/M.Tech	Anna University	Chemical Engineering	11/08/2022	2.8	Assistant Professor	Assistant Professor		Regular	Yes		No
17	I Sridevi	XXXXXXX47C	M.E/M.Tech	Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology	Environmental Engineering	26/10/2018	3.8	Assistant Professor	Assistant Professor		Regular	No	30/06/2022	No

18	A Thamaraiselvan	XXXXXXX27B	M.E/M.Tech	Sathybama University	Biotechnology	17/06/2019	3	Assistant Professor	Assistant Professor		Regular	No	16/07/2022	No
19	K Sruthi	XXXXXXX85Q	M.E/M.Tech	Anna University	Chemical Engineering	09/12/2019	2	Assistant Professor	Assistant Professor		Regular	No	20/12/2021	No
20	M. Syed Mohammed Razak	XXXXXXX15P	M.E/M.Tech	Anna University	Chemical Engineering	07/08/2020	1.4	Assistant Professor	Assistant Professor		Regular	No	24/12/2021	No

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 Department0

Table No.C2.1: Student-faculty ratio.

Description	**CAY(2024-25)**	**CAYm1 (2023-24)**	**CAYm2 (2022-23)**
UG1.B	66	63	62
UG1.C	63	62	63
UG1.D	62	63	62
UG1: Chemical Engineering	**191**	**188**	**187**
DS=Total no. of students in all UG and PG programs in the Department	191	188	187
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=** 191	**S2=** 188	**S3=** 187
DF=Total no. of faculty members in the Department	11	12	12
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=** 11	**F2=** 12	**F3=** 12
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= 17.36**	**SFR2= 15.67**	**SFR3= 17.00**
Average SFR for 3 years	**SFR= 16.68**		

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)	3	8	9.00	17.22
2023-24(CAYm1)	3	9	9.00	18.33
2022-23(CAYm2)	3	8	9.00	17.22

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	1.00	2.00	2.00	6.00	8.00
2023-24	1.00	1.00	2.00	1.00	6.00	10.00
2022-23	1.00	1.00	2.00	1.00	6.00	10.00
Average	RF1=1.00	AF1=1.00	RF2=2.00	AF2=1.33	RF2=6.00	AF2=9.33

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	Mr.Azhoor	Course Instructor	Central Palmgur and Palm Products Institute, KVIC, Chennai	Skill Development Training Programme on Preparation of Poly and Chemicals	40.00
2	Mr.Khanna.M.S	Course Instructor	Central Palmgur and Palm Products Institute, KVIC, Chennai	Skill Development Training Programme on Preparation of Herbal Products	40.00
3	DR.N.Vedaraman	Course Instructor	CSIR – Central Leather Research Institute	Seminar	3.00
4	Mr. B. Paneer Selvam	Course Instructor	Chennai Petroleum Corporation Limited, Chennai	Seminar	3.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. R. Muthuswamy	Course Instructor & Principal Director	Central Palmgur and Palm Products Institute, KVIC, Chennai	Skill Development Training Programme on Preparation of Poly and Chemicals	40.00
2	Mr.Khanna.M.S	Course Instructor	Central Palmgur and Palm Products Institute, KVIC, Chennai	Skill Development Training Programme on Preparation of Poly and Chemicals	40.00
3	Mr.Sivaraj, Mr.Manivannan,	Course Instructor	Schlumberg	Seminar	6.00
4	Mr.Sujith Priyan M	Course Instructor	Madras Fertilizers Limited (GOI)	Seminar	3.00
5	Mr. Rajesh Kumar Nachimuthu	Course Instructor	Michelin India Private Limited	Seminar	3.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr.Azhoor & Dr. R. Muthuswamy	Course Instructor	Central Palmgur and Palm Products Institute, KVIC, Chennai	Skill Development Training Programme on Preparation of Poly and Chemicals	40.00
2	Mr.Gnanaprakash	Course Instructor	Thirumalai groups – Ultramarine & pigments Ltd.	Seminar	3.00
3	Dr.R.Saravanathamizhan	Course Instructor	Department of Chemical Engineering, ACT Campus, Anna University	Seminar	3.00
4	Dr.N.Venkataraman	Course Instructor	Fides Global Pvt.Ltd	Seminar	3.00

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	9	18	11
2	No. of peer reviewed conference papers published	0	0	0
3	No. of books/book chapters published	3	1	2

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.B.Bharathiraja		Chemical Engg	Evaluation of marine sea weeds found along the coastal line of Tamil Nadu for Bio-oil production	TNSCST / Students Project scheme	1	0.01
						Amount received (Rs.):0.01

(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. J. B. Veeramalini		Chemical Engg	National Conference on Environmental and sustainable technologies	DST – SERB / Conference	1	1.00
Dr. A. Saravanaraj		Chemical Engg	National Conference on Green Innovations for Future Technologies (GIFT-2022)	DST – SERB / Conference	1	1.00
Dr.Bharathiraja.B		Chemical Engg	Waste to Wealth: emerging Trends in Green Energy for Sustainable Development (2022)	ATAL – AICTE / FDP	1	3.00
Dr. A. Saravanaraj		Chemical Engg	Experimental Investigation on Encapsulation of Omega-3 Fatty acid using Edible Bacterial Polymer	TNSCST / Students Project scheme	1	0.01
Dr.Bharathiraja.B		Chemical Engg	Evaluation of marine sea weeds found along the coastal line of Tamil Nadu for Bio-oil production	TNSCST / Students Project scheme	1	0.01
						Amount received (Rs.):5.02

(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.J.B.Veeramalini		Chemical Engg	Fluid Flow analysis using ASPEN HYSYS and ASPEN PLUS for Chemical Engineers	ATAL –AICTE / FDP	1	0.93
Dr B Bharathiraja		Chemical Engg	Modernization of process control and chemical reaction laboratory using ASPEN HYSYS	AICTE - MODROBs	3	11.10
						Amount received (Rs.):12.03

Total Amount (Lacs) Received for the Past 3 Years: 17.06

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)

(CAYm2)

(CAYm3)

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

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 A SaravanaRaj	Process development for microencapsulation	12 Months	1.00	1.00	Conference presented
Dr J B Veeramalini	E-waste Recovery	12 Months	1.00	1.00	Published Paper
			Amount received (Rs.): 2.00		

(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
-	-	-	0.00	0.00	-
			Amount received (Rs.): 0.00		

(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
-	-	-	0.00	0.00	-
			Amount received (Rs.): 0.00		

Total amount (Lacs) received for the past 3 years : 2.00

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	Organic Chemistry Laboratory	3	• Reflux Condenser • Melting Point Apparatus • Hot Air Oven • Deep Freezer	14 Hours	Mrs. U. Aparna	Lab Assistant	B. Sc

2	Fluid Mechanics Laboratory	3	• Packed Bed Column • Fluidized Bed Column • Vertical Annular Pipe • Helical and spiral coils • Frictional losses through long horizontal pipes Open	12 Hours	Mr. B. Chiranjeevi	Lab Assistant	Diploma
3	Particle Mechanics Laboratory	3	• Plate and Frame Filter Press • Sieve shaker • Leaf filter • Jaw Crusher • Ball Mill • Cyclone Separator Roll Crusher Rotary drum vacuum filter	18 Hours	Mrs. U. Aparna	Lab Assistant	B. Sc
4	Chemical and Technical Analysis Laboratory	3	• Cloud point apparatus • Saybolt Viscometer • Redwood viscometer • Bomb Calorimeter • Junkers gas Calorimeter Cleveland open cup apparatus	18 Hours	Mrs. U. Aparna	Lab Assistant	B. Sc
5	Heat Transfer Laboratory	3	• Open Pan Evaporator • Double Pipe Heat Exchanger • Shell and Tube Heat Exchanger • Bare and Finned Tube Heat Exchanger Agitated Vessel	20Hours	Mr.E.Sathish	Lab Assistant	B. Sc
6	Process Control Laboratory	3	• Cascade control system • U tube manometer with controller • Control valve characteristics • Flow Transmitter Level Transmitter Interacting Tank and	14 Hours	Mr.E.Sathish	Lab Assistant	B. Sc
7	Mass Transfer Laboratory	3	• Simple distillation • Vacuum Dryer • Ion exchange column • Rotating disc contactor • Tray Dryer Cooling tower Absorption column	20 Hours	Mr. B. Chiranjeevi	Lab Assistant	Diploma
8	Computational Programming Laboratory For Chemical Engineers	3	• Aspen plus and Hysys • DWSIM • Microsoft Excel Software • Matlab Campus Wide License	24 Hours	Mr. B. Chiranjeevi	Lab Assistant	Diploma
9	Chemical Reaction Engineering Laboratory	3	• Batch Reactor • Semi batch reactor • Plug flow reactor • Continuous Stirred Tank Reactor • Packed bed reactor Continuous Stirred Tank	12 Hours	Mr.E.Sathish	Lab Assistant	B. Sc

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Organic Chemistry Laboratory	1.Personal Protective Equipment (PPE) a. Safety goggles: Protect your eyes from chemical splashes, vapours, and reactions. b. Lab coat: Preferably flame-resistant, to protect against chemical spills and splashes. c. Always button up the coat. d. Gloves: Use chemical-resistant gloves depending on the solvents and chemicals in use. e. Closed-toe, non-slip shoes: Essential to prevent chemical spills or dropped glassware from injuring feet. 2. Chemical Handling and Storage a. Store chemicals properly. b. Label all containers clearly with chemical name, concentration, and hazard symbol (flammable, corrosive, etc.). 3. Heat Sources a. Control heating carefully: When heating organic compounds, use water baths, heating mantles or oil baths - never open flames, unless absolutely necessary. 4. Glassware and Equipment Safety a. Inspect glassware before use: Look for cracks, chips, or stress points that may cause breakage under heat or pressure. b. Secure glassware properly. 5. Waste Management a. Waste disposal: Follow the lab's protocol for chemical waste 6. Emergency Preparedness a. Know the location of fire extinguishers and fire blankets. b. Have a first-aid kit available for minor chemical burns or injuries.
2	Fluid Mechanics Laboratory	1. Personal Protective Equipment (PPE) a. Safety goggles: Protect your eyes from splashes or high-pressure leaks. b. Lab coat: To avoid getting your clothes wet or contaminated. c. Non-slip, water proof shoes: Floors can get wet, making slips likely. 2. Handling Equipment and Machinery a. Check equipment before use such as inspect pipes, hoses, tanks, and connections for leaks, cracks, or wear. b. Secure moving parts: Keep loose clothing, hair, and jewellery away from pumps, fans, or rotors. 3. Electrical Safety a. Keep electrical equipment dry: Water and electricity can be deadly together. b. Check for insulated wiring: Avoid using machines with exposed wires. c. Turn off power first before fixing any equipment. 4. Emergency Preparedness a. Know where emergency shut-offs are for water and electricity. b. Locate first aid kits, fire extinguishers, and spill kits. c. Understand emergency exit routes.

3	Chemical and Technical Analysis Laboratory	1.Personal Protective Equipment (PPE) a. Safety goggles: Protect your eyes from chemical splashes, vapors and reactions. b. Lab coat: Preferably flame-resistant, to protect against chemical spills and splashes. Always button up the coat. c. Gloves: Use chemical-resistant gloves depending on the solvents and chemicals in use. d. Closed-toe, non-slip shoes: Essential to prevent chemical spills or dropped glassware from injuring feet. 2. Chemical Handling and Storage a. Store chemicals properly. b. Label all containers clearly with chemical name, concentration, and hazard symbol (flammable, corrosive, etc.). 3. Heat Sources a. Control heating carefully: When heating organic compounds, use water baths, heating mantles or oil baths - never open flames, unless absolutely necessary. 4. Glassware and Equipment Safety a. Inspect glassware before use: Look for cracks, chips, or stress points that may cause breakage under heat or pressure. b. Secure glassware properly. 5. Waste Management a. Waste disposal: Follow the lab's protocol for chemical waste 6. Emergency Preparedness a. Know the location of fire extinguishers and fire blankets. b. Have a first-aid kit available for minor chemical burns or injuries.
4	Particle Mechanics Laboratory	1. Personal Protective Equipment (PPE) a. Safety goggles: Protect your eyes from dust and flying particles. b. Dust masks or respirators: Essential if working with fine powders that can be inhaled. c. Lab coat and gloves: To protect skin and clothing. d. Closed-toe, non-slip shoes: Dust can make floors slippery. 2. Handling Equipment a. Inspect equipment before use: Sieves, mixers, and hoppers for wear or damage. b. Secure moving parts: Shields and guards must always be in place around rotating or vibrating machinery. 3. Emergency Preparedness a. Know the location of fire extinguishers. b. Locate first aid kits, eyewash stations, and emergency showers. 4. General Good Practices a. Avoid eating and drinking in the lab. b. Stay alert: Particle build-up in equipment can cause sudden failures or hazards.
5	Heat Transfer Laboratory	1. Personal Protective Equipment (PPE) a. Wear heat-resistant gloves when handling hot equipment like flasks, metal surfaces, or heating plates. b. Use safety goggles to protect eyes from splashes or sudden releases of steam or hot liquids. c. Lab coat (preferably flame-retardant) and closed-toe shoes are a must. 2. Equipment Safety a. Inspect heating devices (hot plates, heating mantles, Bunsen burners) before use - check for damaged cords, leaks, or cracks. b. Use thermometers or thermal sensors to monitor temperature carefully - overheating can lead to explosions or fires. 3. Handling Hot Materials a. Use tongs, thermal gloves, or insulating pads to move hot vessels. b. Let glassware cool down naturally - sudden cooling can cause it to shatter. 4. Working with Fluids and Solids a. Be extra careful with hot oils or molten salts (like in oil baths) — they retain heat and can cause severe burns even after the heat source is turned off. b. Always stir gently when heating liquids to prevent sudden boiling ("bumping"). c. Avoid overfilling containers, especially when heating — thermal expansion can cause spills. 5. Emergency Readiness a. Know where the fire blankets, safety showers, and eyewash stations are located. b. Keep a burn first-aid kit available. c. Train on how to handle burns (cool the burn with water, seek medical help immediately for serious injuries). 6. General Good Practices a. Always start with low heat and gradually increase — sudden heating can cause dangerous reactions. b. Never leave heating operations unattended. c. Record and monitor heating times and temperatures properly for reproducibility and safety.
6	Process Control Laboratory	1. Personal Protective Equipment (PPE) a. Lab coat: To protect from spills or mechanical hazards. b. Closed-toe, non-slip shoes: Prevent slips or injury from dropped tools. 2. Electrical Safety a. Inspect wiring and devices before use. b. Use insulated tools: When working with or near electrical systems. 3. Pressurized Systems and Valves a. Handle valves carefully: Open/close them slowly to avoid sudden pressure surges. b. Always check pressure gauges: before disconnecting lines or sensors. 4. Automation System Safety a. Test programs in simulation mode first b. Emergency stop buttons must be working and accessible. 5. Emergency Readiness a. Locate emergency shut-off switches for equipment and electrical panels. b. Know how to use fire extinguishers, first-aid kits, and spill kits.
7	Mass Transfer Laboratory	1. Personal Protective Equipment (PPE) a. Lab coat: To shield against chemical spills and contamination. b. Gloves: Use chemical-resistant gloves. c. Closed-toe, non-slip shoes: Always essential in wet and chemical environments. 2. Chemical Handling a. Label containers clearly: Always label flasks, tanks, and bottles with chemical name and hazard class. 3. Equipment and Process Safety a. Check glassware and equipment before use. b. Secure connections: Properly clamp hoses, columns, and glassware to avoid leaks or falls. 4. Heat and Pressure Cautions a. Control heating carefully: Slow and steady when using heaters, hot plates, or water baths. b. Monitor pressure: In packed columns, distillation setups, or any closed system to prevent accidents. c. Never seal heated systems completely: Always provide a pressure relief path. 5. Emergency Preparedness a. Know locations of fire extinguishers, eyewash stations, showers, and spill kits.
8	Computational Programming Laboratory For Chemical Engineers	1. Electrical and Hardware Safety a. Handle computers and electronics carefully: Avoid pulling cables or overloading sockets. b. Keep liquids away from laptops, desktops, keyboards, and extension boards. c. Use properly grounded outlets: To avoid static shocks or equipment damage. 2. Programming and Simulation Safety a. A wrong input (e.g., wrong reaction rates, temperatures, pressures) can cause incorrect or dangerous design outcomes. b. Always verify your code or simulation against known data before trusting new results. 3. Data Management a. Organize files clearly: Name files properly and maintain version control (use Git, if possible). b. Avoid running unverified codes: Downloading and running unknown codes can crash systems or corrupt data. c. Protect sensitive data: If dealing with company or research confidential information, encrypt and store it securely. 4. General Laboratory Behaviors a. No eating or drinking near computers.

9	Chemical Reaction Engineering Laboratory.	1. Personal Protective Equipment (PPE) a. Safety goggles: To protect from chemical splashes, flying debris, or reactions that may cause harm. b. Lab coat: Preferably flame-resistant, to protect against chemical spills and splashes. c. Gloves: Use appropriate gloves (chemical-resistant, heat-resistant) depending on the chemicals you're handling. d. Closed-toe, non-slip shoes. 2. Reaction Setup and Equipment Safety a. Inspect reactors, pipelines, and connections for leaks, cracks, or wear before starting. 3. Pressure Safety a. Be mindful of high-pressure reactions. b. Never exceed recommended pressure in high-pressure systems. Ensure that the equipment used can withstand the pressure. 4. Emergency Preparedness a. Know the location of emergency shutdowns for all reaction systems (both electrical and chemical). b. Have a plan for runaway reactions: Keep emergency cooling systems in place and accessible. c. Know the location of fire extinguishers, eyewash stations, safety showers, and spill kits. d. Evacuation plans: Always be aware of the lab's evacuation routes and ensure the lab is clear of obstructions. 5. Waste Management a. Dispose of chemicals properly: Follow lab guidelines for disposing of spent reactants, solvents, and catalysts.

D3. Project Laboratory/Research Laboratory

7.5 Project laboratory/research laboratory /centre of excellence

The **Department of Chemical Engineering** at **Vel Tech High Tech** fosters a robust research environment through the establishment of **dedicated research laboratories and project facilities**. These spaces provide a platform for both students and faculty to **engage in innovative, interdisciplinary, and sustainable research** in line with global engineering challenges and SDG (Sustainable Development Goals) initiatives.

These laboratories support:

- Execution of **final-year UG Projects**.
- Research activities under **funded schemes** (TNSCST, AICTE, etc.).
- Development of **innovative prototypes** under the **Entrepreneurship Development Cell (EDC)** and **Institution's Innovation Council (IIC)**.
- **MS by Research** and **PhD-level** investigations in advanced areas of chemical engineering.

Infrastructure Highlights

- **Computational tools**: ASPEN PLUS, MATLAB for process modelling and simulation.
- **Experimental setups**: Fluidized bed reactor, Packed Absorption Columns, Heat Exchangers, Distillation units.
- **Analytical instruments**: UV-Vis Spectrophotometer, FTIR, Gas Chromatograph, Rotary Evaporator, TGA, Soxhlet extractor.

Research Laboratory

- Supports **faculty, UG students, and Ph.D. scholars** in executing **funded research projects.**
- Facilitates **instrumentation-based training**, **sample characterization**, and **data-driven experimental research**.
- Actively encourages publications in **Scopus/SCI-indexed journals** and development of patentable technologies.

Innovation and Incubation Ecosystem

The department facilitates innovation by:

- Providing **access to laboratories beyond academic hours** for project work.
- Mentoring students through **EDC and IIC initiatives** to develop working prototypes.
- Encouraging participation in platforms like **Smart India Hackathon (SIH) and Institute Innovation Challenges**.
- Supporting the development of **early-stage prototypes**, some of which have been submitted for **patent filing** and industry presentation.

Outcomes

1. **Enhanced Student Research Skills**
   The availability of well-equipped laboratories has significantly improved students' ability to undertake independent and guided research projects, enhancing their analytical, problem-solving, and experimental skills.
2. **Increased UG Project Completion Rate**
   An average of 40–60 UG projects are successfully completed each academic year using the departmental infrastructure, covering diverse research areas in line with emerging industrial trends and societal needs.

3. **Improved Publication Output**
   Student and faculty-led research in these labs has resulted in several publications in reputed **Scopus and SCI-indexed journals**, as well as presentations at national and international conferences
4. **Support for Higher Studies and Competitive Exams**
   Project experience and research exposure have helped students in securing admissions to premier institutions for **higher studies (M.Tech/PhD)** and performing well in **competitive exams like GATE, GRE, etc.**
5. **Industry Collaboration and MOUs**
   Collaborative research activities have been initiated through MOUs with **industrial partners, research organizations**, and **startups**, enhancing the practical relevance of student projects and enabling internships.
6. **Increased Participation in National Competitions**
   Students trained in these facilities actively participate and win awards in **Smart India Hackathon, Innovation Challenges**, and **Start-up expos** gaining national recognition.
7. **Faculty Research and Funding**
   The laboratories support faculty in executing **funded research projects**, writing **project proposals**, and mentoring **PhD/MS by Research scholars**, thereby strengthening the department's research profile.
8. **Skill Development and Employment Readiness**
   Exposure to real-time experiments, analytical tools, and simulations contributes to the development of industry-relevant technical skills, making students better prepared for **employment** in core and allied industries.
9. **Contribution to SDGs and Societal Impact**
   Several projects undertaken focus on **environmental remediation, clean energy, and sustainable technologies**, directly contributing to **United Nations Sustainable Development Goals (SDGs)** such as SDG 6, 7, 9, and 13.

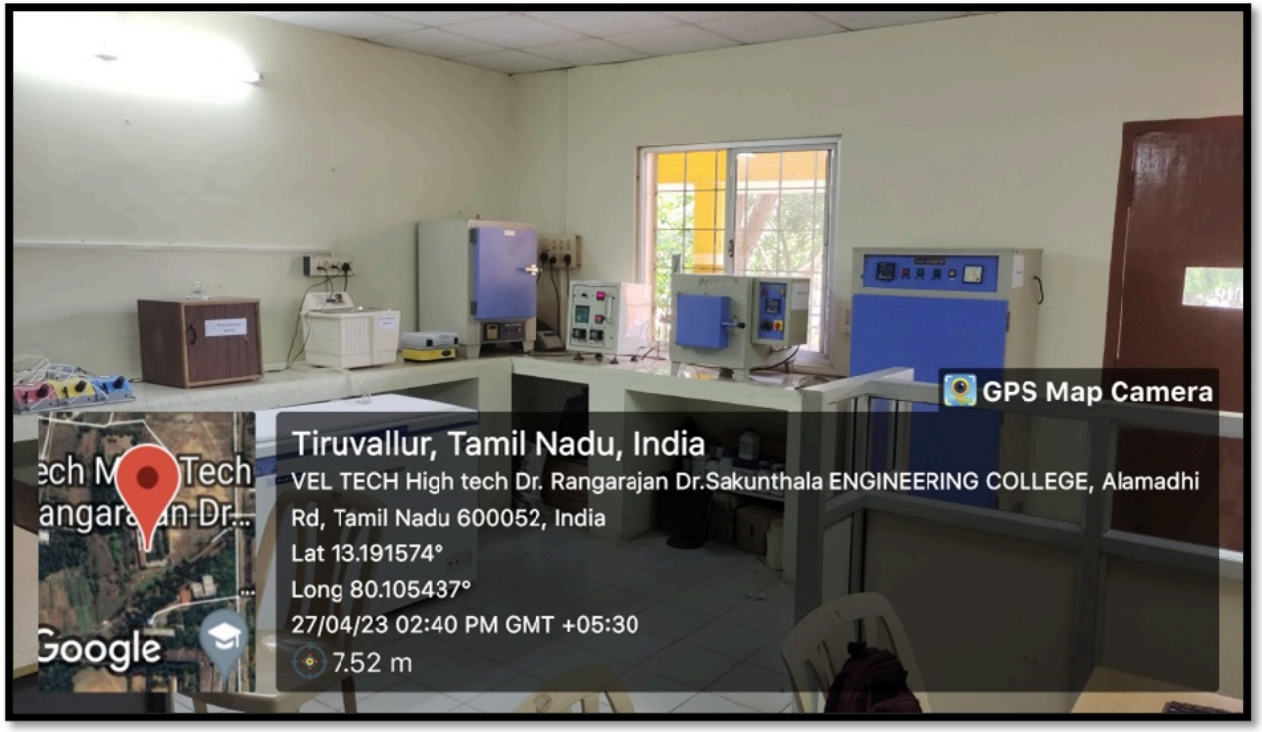
Table No. 7.5.1: List of project laboratory/research laboratory /Centre of Excellence.

S.N.	Name of the Laboratory	Room No. Location	Area in m^2
1.	Pure Phase Research Laboratory	F106	550
2.	Instrumental Analytical Research Laboratory	F107	700
3.	Basic Chemical Research Laboratory	F001	350

Table No. 7.5.2: Details of PhD Guidance

S.No	Reg No / Roll No	Scholar Name	Register Year	Status	Course
1.	24255991122	Ms. B. Manjupriya	Jan 2024	Course Work	PhD
2.	24225991138	Ms. Priyashree	Jan 2024	Course Work	PhD

3.	25235991117	Ms. M.Janani	Jan 2025	Course Work	PhD
4.	25145991114	Mr.V.Dinesh	Jan 2025	Course Work	PhD
5.	51111001	Ms. K. Swetha	June 2025	Application Submitted	MS (By Research) + PhD
6	50121005	Mr. S. Bharathi Babu	June 2025	Application Submitted	PhD



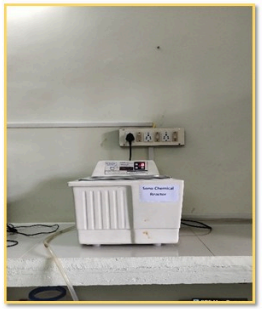
Gas Chromatography		
Cost	:	Rs. 7,16,000
Make	:	Systronics

Atomic Adsorption Spectroscopy		
Cost	:	Rs. 5,52,000
Make	:	Elica Connecting Science Lab

Fourier-Transform Infrared Spectroscopy		
Cost	:	Rs. 8,50,000
Make	:	Agilent

Double-Beam UV visible spectroscopy		
Cost	:	Rs. 4,70,000
Make	:	Infradigi

Photo-Chemical Reactor		
Cost	:	Rs. 1,13,400
Make	:	Lelesil Innovative systems



Sono Chemical Reactor		
Cost	:	Rs. 1,17,600
Make	:	Hielscher Ultrasonics

BOD Incubator		
Cost	:	Rs. 74,000
Make	:	Sansel (Akay)

Hot-air Oven		
Cost	:	Rs. 12,000
Make	:	Eurotech

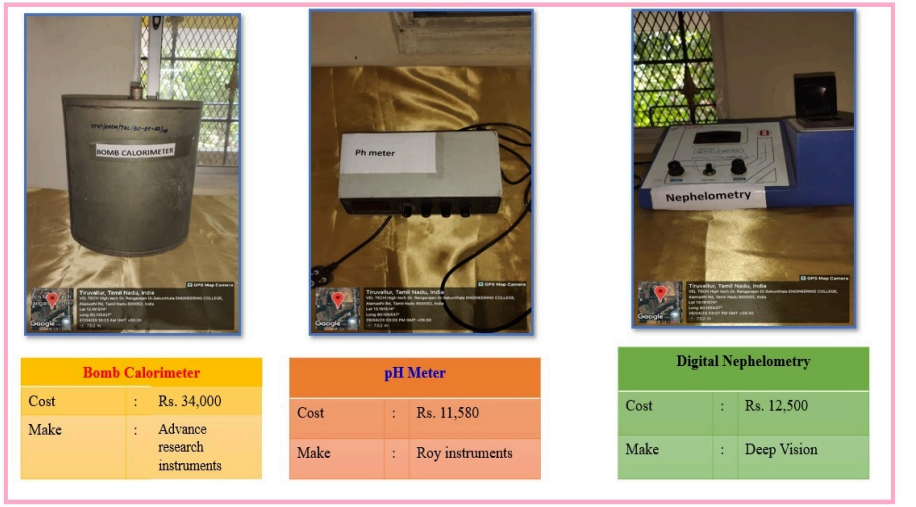
Electric Furnace		
Cost	:	Rs. 62,730
Make	:	Sunbim

Deep Freezer		
Cost	:	Rs. 70,800
Make	:	Bluestar

COD Analyzer		
Cost	:	Rs. 34,500
Make	:	Merk

Incinerator		
Cost	:	Rs. 1,25,000
Make	:	Technico

UV Spectrophotometer		
Cost	:	Rs. 1,08,750
Make	:	King Lab



Bomb Calorimeter		
Cost	:	Rs. 34,000
Make	:	Advance research instruments

pH Meter		
Cost	:	Rs. 11,580
Make	:	Roy instruments

Digital Nephelometry		
Cost	:	Rs. 12,500
Make	:	Deep Vision

Digital Oxygen Measurement		
Cost	:	Rs. 22,900
Make	:	King Lab

Digital Photo Calorimeter		
Cost	:	Rs. 6,800
Make	:	Deep Vision

Fig 7.5.1 Sample Photos of Research Laboratory

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)	810	40	31	34	79
2023-24(CAYm1)	810	40	30	38	79
2024-25(CAY)	930	46	46	49	101

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 2024-25	Actual Expenses in 2024-25 till	Budgeted in 2023-24	Actual Expenses in 2023-24 till	Budgeted in 2022-23	Actual Expenses in 2022-23 till	Budgeted in 2021-22	Actual Expenses in 2021-22 till
Infrastructure Built-Up	0	5157131	85000000	71859707	30000000	33384699	0	0
Library	1510000	1082587	1301100	1231548	1350000	1337480	750000	669936
Laboratory equipment	21028667	18181552	17279335	14392805	12500000	12187049	6750000	1421743
Teaching and non-teaching staff salary	221751313	168616542	140654276	135135473	120000000	113433926	100000000	84197003
Outreach Programs	0	0	0	0	0	0	0	0
R&D	3360000	258118	3828000	1266034	2500000	282033	2500000	2270126
Training, Placement and Industry linkage	1970800	2752938	2100000	1119947	3000000	2473951	3000000	2724284
SDGs	0	0	0	0	0	0	0	0
Entrepreneurship	0	0	0	0	0	0	0	0
Others, specify	95335220	125189367	106138165	88051681	24234069	64680755	37500000	34458243
Total	**344956000**	**321238235**	**356300876**	**313057195**	**193584069**	**227779893**	**150500000**	**125741335**

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 2024-25	Actual Expenses in 2024-25 till	Budgeted in 2023-24	Actual Expenses in 2023-24 till	Budgeted in 2022-23	Actual Expenses in 2022-23 till	Budgeted in 2021-22	Actual Expenses in 2021-22 till
Laboratory equipment	60000	47027	0	0	0	0	0	0

Software	0	0	0	0	0	0	0	0
SDGs	0	0	0	0	0	0	0	0
Support for faculty development	36000	206346	25000	4787	0	0	0	0
R & D	0	54870	150000	129613	100000	82780	100000	946004
Industrial Training, Industry expert, Internship	0	361478	350000	107091	250000	300408	250000	246352
Miscellaneous Expenses*	7510000	6232228	6500000	6054542	5800000	5358486	5000000	4652000
Total	**7606000**	**6901949**	**7025000**	**6296033**	**6150000**	**5741674**	**5350000**	**5844356**