

NATIONAL BOARD OF ACCREDITATION

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

Program Name : Mechanical Engineering	Discipline : Engineering & Technology
Level : Under Graduate	Tier : 1
Application No : 11713	Date of Submission : 02-04-2026

PART A- Profile of the Institute

A1.Name of the Institute: St. Vincent Pallotti College of Engineering and Technology	
Year of Establishment : 2004	Location of the Institute: Nagpur
A2. Institute Address: Gavsi Manapur , Wardha Road, Nagpur	
City:Nagpur	State:Maharashtra
Pin Code:441108	Website:www.stvincentngp.edu.in
Email:info@stvincentngp.edu.in	Phone No(with STD Code):-
A3. Name and Address of the Affiliating University (if any):	
Name of the University : Rashtrasant Tukdoji Maharaj Nagpur Univerisity Nag	City: Nagpur
State : Maharashtra	Pin Code: 440033
A4. Type of the Institution: Autonomous CAY(2021-22)	
A5. Ownership Status: Self financing	

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

- No. of UG programs: **13**
- No. of PG programs: **8**

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	2021	--	Artificial Intelligence
2	Engineering & Technology	PG	Automotive Technology	2025	--	Mechanical Engineering
3	Engineering & Technology	PG	CAD/CAM	2012	2025	Mechanical Engineering
4	Engineering & Technology	UG	Civil Engineering	2018	--	Civil Engineering
5	Engineering & Technology	UG	Computer Engineering	2004	2025	Computer Engineering
6	Engineering & Technology	UG	Computer Science and Business Systems	2022	--	Computer Science and Business System
7	Engineering & Technology	UG	Computer Science and Engineering	2025	--	Computer Science and Engineering
8	Engineering & Technology	PG	Computer Science and Engineering	2012	2025	Computer Science and Engineering
9	Engineering & Technology	PG	Computer Science and Engineering (Artificial Intelligence and Machine Learning)	2025	--	Information Technology

10	Engineering & Technology	PG	Computer Science and Engineering (Big Data Analytics)	2025	--	Computer Science and Engineering
11	Engineering & Technology	UG	Computer Science and Engineering (Cyber Security)	2022	--	Computer Science and Engineering (Cyber Security)
12	Engineering & Technology	UG	Computer Science and Engineering (Data Science)	2021	--	Computer Science and Engineering (Data Science)
13	Engineering & Technology	UG	Electrical Engineering	2004	--	Electrical Engineering
14	Engineering & Technology	UG	Electronics and Telecommunication Engineering	2004	--	Electronics and Telecommunication Engineering
15	Engineering & Technology	PG	Embedded System & VLSI	2025	--	Electronics and Telecommunication Engineering
16	Engineering & Technology	UG	Industrial IoT	2022	--	Industrial IOT
17	Engineering & Technology	UG	Information Technology	2007	--	Informatics Technology
18	Engineering & Technology	UG	Mechanical Engineering	2004	--	Mechanical Engineering
19	Engineering & Technology	PG	Power Electronics & Power Systems	2025	--	Electrical Engineering
20	Engineering & Technology	UG	Robotics and Artificial Intelligence	2025	--	Robotics and Artificial Intelligence
21	Engineering & Technology	PG	Structural Engineering	2025	--	Civil Engineering

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
Mechanical Engineering	Yes	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)

Allied Department/Cluster Name	Program Name	Program Level
Industrial IOT	Industrial IoT	UG

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. C TIME PRO(ACCI
1	Mechanical Engineering	UG	2004 / --	60	Yes	2021	60	2004	F.No.06/07/MS/ENGG/2004/029	Granted accreditation for 3 years for the period (specify period)	2022	2025	1

Sanctioned Intake for Last Five Years for the Automotive Technology

Academic Year	Sanctioned Intake
2025-26	60
2024-25	60
2023-24	60
2022-23	60
2021-22	60
2020-21	120

List of the Allied Departments/Cluster and Programs:

SR.NO.	ALLIED DEPARTMENT NAME	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	TC
1	Industrial IOT	Industrial IoT	UG	2022 / --	60	No	NA	60	2022	F.No./Western/1-10967931690/2022/EOA	Not eligible for accreditation	--	--

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

A. Name of the HoD :	Dr. S. S. Satputaley
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)	60	60	60	60	60	120	120

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	60	60	59	60	60	45	105
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	12	8	9	6	45	31
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	3	3	3	3	0	5	7
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	63	75	70	72	66	95	143

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)	60	60	3	105.00
2024-25 (CAYm1)	60	60	3	105.00
2023-24 (CAYm2)	60	59	3	103.33

Average [(ER1 + ER2 + ER3) / 3] = 104.44 $\approx$ 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).	66.00	165.00	151.00
B=No. of students who graduated from the program in the stipulated course duration	49.00	68.00	118.00
Success Rate (SR)= (B/A) * 100	74.24	41.21	78.15

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 64.53

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)	7.20	7.05	6.35
Y=Total no. of successful students	60.00	58.00	53.00
Z=Total no. of students appeared in the examination	63.00	62.00	63.00
API [X*(Y/Z)]	6.86	6.60	5.34

Average API[(AP1+AP2+AP3)/3] : 6.27

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)
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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 2nd year/10)	6.41	5.59	6.18
Y=Total no. of successful students	66.00	53.00	52.00
Z=Total no. of students appeared in the examination	66.00	62.00	58.00
API [X * (Y/Z)]	6.41	4.78	5.54

Average API [(AP1 + AP2 + AP3)/3] : 5.58

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)	6.70	6.54	5.11
Y=Total no. of successful students	51.00	49.00	82.00
Z=Total no. of students appeared in the examination	53.00	52.00	89.00
API [X*(Y/Z)]:	6.45	6.16	4.71

Average API [(AP1 + AP2 + AP3)/3] : 5.77

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	66.00	165.00	151.00
X=No. of students placed	35.00	55.00	92.00
Y=No. of students admitted to higher studies	6.00	8.00	20.00
Z= No. of students taking up entrepreneurship	0.00	0.00	1.00
Placement Index(P) = ((X + Y + Z)/FS) * 100):	62.12	38.18	74.83

Average Placement Index = (P_1 + P_2 + P_3)/3: 58.38 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	Dr. S. S. Satputaley	XXXXXXXX64H	Ph.D	VNIT	Thermal	26/07/2005	20.7	Assistant Professor	Associate Professor	02/08/2021	Regular	Yes		Yes

2	Dr. P. B. Lanjewar	XXXXXXXX61P	Ph.D	RTMNU	Thermal	01/07/2005	20.8	Associate Professor	Professor	02/08/2021	Regular	Yes		No
3	Dr. P. S. Nerkar	XXXXXXXX03J	Ph.D	RTMNU	Metallurgy	05/07/2005	20.8	Assistant Professor	Assistant Professor		Regular	Yes		No
4	Mr. S. V. Deo	XXXXXXXX37S	M.E.	BITS Pilani	Production	19/07/2004	21.8	Assistant Professor	Assistant Professor		Regular	Yes		No
5	Mr. R. N. Chakraborty	XXXXXXXX33A	M.Tech	VNIT	Design	03/01/2007	19.2	Assistant Professor	Assistant Professor		Regular	Yes		No
6	Mr. P. R. Bhagat	XXXXXXXX72Q	M.Tech	RTMNU	Thermal	13/07/2007	18.8	Assistant Professor	Assistant Professor		Regular	Yes		No
7	Dr. G. R. Boob	XXXXXXXX43N	Ph.D	RTMNU	Design	23/07/2007	18.7	Assistant Professor	Assistant Professor		Regular	Yes		No
8	Dr. M. Ahemad	XXXXXXXX00E	Ph.D	RTMNU	Production	19/07/2007	18.8	Assistant Professor	Associate Professor	02/08/2021	Regular	Yes		No
9	Dr. V. C. Sontake	XXXXXXXX62M	Ph.D	VNIT	Thermal	13/06/2009	16.9	Assistant Professor	Assistant Professor		Regular	Yes		No
10	Dr. M. K. Bhadke	XXXXXXXX37Q	Ph.D	RTMNU	Industrial Engineering	09/07/2009	16.8	Assistant Professor	Assistant Professor		Regular	Yes		No
11	Dr. B. S. Bhaskar	XXXXXXXX76K	Ph.D	RTMNU	Thermal	15/06/2010	15.9	Assistant Professor	Assistant Professor		Regular	Yes		No
12	Dr. M. S. Khan	XXXXXXXX26C	Ph.D	RTMNU	Thermo-fluid	21/06/2010	15.8	Assistant Professor	Assistant Professor		Regular	Yes		No
13	Mr P. J. Borle	XXXXXXXX64E	M.Tech	RTMNU	Production	18/06/2011	14.9	Assistant Professor	Assistant Professor		Regular	Yes		No
14	Dr. A. R. Bhende	XXXXXXXX19M	Ph.D	RTMNU	CAD/CAM	09/07/2011	14.8	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Dr. M. P. Kshirsagar	XXXXXXXX42G	Ph.D	VNIT	Thermal	02/09/2011	14.6	Assistant Professor	Assistant Professor		Regular	Yes		No
16	Mr. A. A. Augustine	XXXXXXXX87P	M.Tech	RTMNU	Design	30/06/2010	15.8	Assistant Professor	Assistant Professor		Regular	Yes		No
17	Dr. H. G. Nagpure	XXXXXXXX06C	Ph.D	RTMNU	Design	18/06/2012	13.9	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Mr. S. N. Kolharkar	XXXXXXXX82J	M.Tech	RTMNU	Industrial Engineering	06/11/2013	12.4	Assistant Professor	Assistant Professor		Regular	Yes		No
19	Mrs. S. M. Umare	XXXXXXXX01E	M.Tech	RTMNU	CAD/CAM	01/01/2011	15.2	Assistant Professor	Assistant Professor		Regular	Yes		No
20	Dr. K. R. Borakhade	XXXXXXXX38R	Ph.D	SGBAU ,Amravati	Thermal	10/07/2013	12.8	Assistant Professor	Associate Professor	02/08/2021	Regular	Yes		No
21	Dr. A. D. Banerjee	XXXXXXXX57M	Ph.D	LPU	Materials Engineering	19/06/2015	10.8	Assistant Professor	Assistant Professor		Regular	Yes		No
22	Mr. A. K. Saxena	XXXXXXXX49E	M.Tech	VIT University,Vellore	Energy and Environmental	01/07/2015	10.8	Assistant Professor	Assistant Professor		Regular	Yes		No

23	Mrs. N. A. Nagpurkar	XXXXXXX33F	M.Tech	MSU Baroda	Production	01/07/2015	10.8	Assistant Professor	Assistant Professor		Regular	Yes		No
24	Mr. Aditya D Khandare	XXXXXXX46G	M.Tech	RTMNU	CAD/CAM	11/06/2014	11.9	Assistant Professor	Assistant Professor		Regular	Yes		No

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

Sr.No	Name of the Faculty	PAN No.	APAAR faculty ID*(if any)	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	Dr. Shriraghavan Madbushi	XXXXXXX96Q	NA	Ph.D	Vignan's Foundation for Science, Technology and Research, Guntur, Andhra Pradesh	Bio Medical Signal Processing, Internet of Things (IoT), IoT for Healthcare	11/12/2014	11.3	Assistant Professor	Associate Professor	26/08/2024	Regular	Yes		Yes
2	Ms. Rajeshwari Shinde	XXXXXXX13K	NA	M.Tech	RTMNU	Internet of Things	01/09/2023	2.6	Assistant Professor	Assistant Professor		Regular	Yes		No
3	Dr. Mohd.Athar Hayat	XXXXXXX62C	NA	Ph.D	RTMNU	Robotics, Ergonomics	21/07/2010	15.7	Assistant Professor	Assistant Professor		Regular	Yes		No
4	Mr. Tushar Aneyrao	XXXXXXX24E	NA	M.Tech	RTMNU	3D Printing, Software Technologies	11/06/2014	11.9	Assistant Professor	Assistant Professor		Regular	Yes		No
5	Mr. Rohan Vaidya	XXXXXXX20F	NA	M.Tech	RTMNU	Embedded Systems & IoT	01/07/2015	10.8	Assistant Professor	Assistant Professor		Regular	Yes		No
6	Dr. Amol Pardhi	XXXXXXX36H	NA	Ph.D	RTMNU	Basic Electronics, Industrial IoT	01/07/2016	9.8	Assistant Professor	Assistant Professor		Regular	Yes		No
7	Ms.Snehal Shingode	XXXXXXX73K	NA	M.Tech	RTMNU	AI & ML	26/06/2025	0.8	Assistant Professor	Assistant Professor		Regular	Yes		No
8	Mr.Sushmit Santraa	XXXXXXX18G	NA	M.Tech	RTMNU	Electronics and Communication	20/08/2025	0.6	Assistant Professor	Assistant Professor		Regular	Yes		No

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 Department2

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

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
UG1.B	66	66	66
UG1.C	66	66	66
UG1.D	66	66	126
UG1: Mechanical Engineering	198	198	258
UG2.B	66	66	66
UG2.C	66	66	0
UG2.D	66	0	0
UG2: Industrial IoT	198	132	66
PG1.A	12	0	0
PG1.B	0	0	0
PG1: Automotive Technology	12	0	0
DS=Total no. of students in all UG and PG programs in the Department	234	222	282
AS=Total no. of students of all UG and PG programs in allied departments	198	132	66
S=Total no. of students in the Department (DS) and allied departments (AS)	S1= 432	S2= 354	S3= 348
DF=Total no. of faculty members in the Department	24	24	24
AF= Total no. of faculty members in the allied Departments	8	6	5
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	F1= 32	F2= 30	F3= 29
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= 13.50	SFR2= 11.80	SFR3= 12.00
Average SFR for 3 years	SFR= 12.43		

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)	17	15	21.00	27.38
2024-25(CAYm1)	15	15	17.00	30.88
2023-24(CAYm2)	12	17	17.00	27.65

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	2.00	1.00	4.00	4.00	14.00	27.00
2024-25	1.00	1.00	3.00	4.00	11.00	25.00
2023-24	1.00	1.00	3.00	3.00	11.00	25.00
Average	RF1=1.33	AF1=1.00	RF2=3.33	AF2=3.67	RF2=12.00	AF2=25.67

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	Mr.Ashish Taywade	Corporate Trainer	Private, Nagpur	Value Education Course 1	22.00
2	Mr.Ashish Taywade	Corporate Trainer	Private, Nagpur	Value Education Course II	30.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr.Ashish Taywade	Corporate Trainer	Private, Nagpur	Indian Knowledge System	25.00
2	Mr.Ashish Taywade	Corporate Trainer	Private, Nagpur	Universal Human Values II	27.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr.Ashish Taywade	Corporate Trainer	Private, Nagpur	Indian Knowledge System	25.00
2	Ms.Sonia Francis	Corporate Trainer	Private, Nagpur	Communication skills	25.00

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	9	10	15
2	No. of peer reviewed conference papers published	10	24	10
3	No. of books/book chapters published	12	1	1

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. Sushant Satputaley	Atulkumar Saxsena	Mechanical Engineering	"Development of Smart System to Control Nutrient and Environment Conditions for Hydroponic Plant Chamber".	Research and Development Cell, RTM Nagpur University under RTMNU RESEARCH PROJECT SCHEME(URPS)	2 years	2.70
Dr.Minhaj Ahemad	NA	Mechanical Engineering	"Low-Cost Automatic Solar-Operated Light Trap for insects in the Agriculture Field".	RGSTC Scheme "Assistance programme of Rajiv Gandhi Science & Technology Applications through University System" at Rashtrasant Tukadoji Maharaj Nagpur University,	2 years	3.90
Homeshwar Girirao Nagpure	students	Mechanical Engineering	AICTE Funded " Udyamotsav -2025"	AICTE	01 day	3.00
						Amount received (Rs.):9.60

(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.Mohammad Athar Hayat	NA	Mechanical Engineering	"IoT-Enabled Smart Manhole Covers: Revolutionizing Sewerage Management with Advanced Monitoring and Blockage Prevention in Nagpur Munciple Corporation."	The Research & Development Cell, RTM Nagpur University	2 years	3.00
Mr.Vijay Ate	Dr. P. B. Lanjewar	Mechanical Engineering	Experimental Investigation of Convective Heat Transfer augmentation in a Heat Exchanger using hybrid Nanofluids	The Research & Development Cell, RTM Nagpur University	2 years	2.55
						Amount received (Rs.):5.55

(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.Minhaj Ahemad	A.Deshpande	Mechanical Engineering	Design & Development of Solar Powered Low-Cost Ultrasonic Bird Repellent Device for Agricultural Fields and Plantations for Protecting High Economy Crops	RGSTC Scheme "Assistance programme of Rajiv Gandhi Science & Technology Applications through University System" at Rashtrasant Tukadoji Maharaj Nagpur University,	2 years	2.47
						Amount received (Rs.):2.47

Total Amount (Lacs) Received for the Past 3 Years: 17.62

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. M A Hayat	NA	Mechanical Engineering	Project Management	YUGASA	1 year	15.00
						Amount received (Rs.):15.00

(CAYm2)

(CAYm3)

Total amount (Lacs) received for the past 3 years: 15.00

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. Anthany Augustine	Case on the 'The Design club'	6 months	0.04	0.04	Research article has been published in IIM Nagpur Conference
Dr. Amit Bhende	Fault Detection of Industrial Air Blower Using Vibration Signal Analysis	6 months	0.02	0.02	Research article has been published in Conference
Dr.Sushant Satputaley	Efficiency Increment on Assembly Line of Combine Harvester at CNHI, Pune	6 months	0.02	0.02	Research article has been published as Book Chapter
Dr.Sushant Satputaley	Productivity Improvement on Fabrication Line of Baler at Chni, Pune	6 months	0.02	0.02	Research article has been published as Book Chapter
Dr.M.Ahemd	Green manufacturing for sustainable production	1 year	0.05	0.05	Text Book Published
Dr. M.Saifullah Khan	An Electrohydrodynamic Induced Non-Thermal Drying Mechanism	1 year	0.30	0.30	Patent published
Dr. Abhranil Banerjee	Unveiling of mechanical, morphological, and thermal characteristics of alkali-treated flax	1 year	0.15	0.15	Research article has been published as Book Chapter
			Amount received (Rs.): 0.60		

(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. Ghanshyam Boob	Scrap Strip Guiding and Collection System for Steel Rolling Plant	6 months	0.10	0.10	Patent Published
Dr. Abhuranil Banerjee	Fabrication and Joining of Polylactic Acid (PLA) based Green Composites	6 month	0.01	0.01	Copyright Registration
Dr. Amit Bhende	Development of a novel hybrid method to evaluate driving comfort in an all-terrain vehicle	1 Year	0.15	0.15	Research article has been published in Journal
Dr. Abhuranil Banerjee	Fabrication and characterization of weld attributes in hot gas welding	1 Year	0.20	0.20	Research article has been published in Journal
Dr.Manish Bhadke	Research instrument design for assessment of health and performance of shift workers	1 Year	0.05	0.05	Research article has been published in Journal
Dr.Minhaj Ahemad	Integrating various green technics for GM	2 month	0.01	0.01	Publication of Copyright
Dr.Minhaj Ahemad	Addressing transition conflict of green manufacturing to sustainable manufacturing	1 Year	0.20	0.20	Research article has been published in Journal
Dr.Minhaj Ahemad	Design and development of cotton lint operating machine	6 months	0.05	0.05	Research article has been published
Dr.S.S.Satputaley	Design and Analysis of a Brake Disc for Formula SAE Race Car	6 months	0.05	0.05	Research article has been published
Dr.S.S.Satputaley	System Design for Induction Hardening of Wheels Used in Overhead Cranes	1 Year	0.10	0.10	Patent Grant
Dr.G.R.Boob	Experimental and Statistical Investigation to Study Effect of Machining Conditions	6 months	0.05	0.05	Research article has been published
Dr.Manish Bhadke	CIMCON 24 ,IIM Nagpur,	6 months	0.06	0.06	Research article has been published
Dr.Manish Bhadke	" SHIFT WORK EFFECT ON OCCUPATIONAL HEALTH AND PERFORMANCE OF WORKERS IN THE MANUFACTURING SECTOR"	6 months	0.03	0.03	Research article has been published
Dr.M.A.Hayat	Design and development of E-bicycle under Ergonomic consideration	6 months	0.05	0.05	Research article has been published
Dr.M.Ahemd	AN ARDINO BASED SOLAR OPERATED LIGHT TRAP FOR INSECTS	1 year	0.30	0.30	Patent published
			Amount received (Rs.): 1.41		

(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. Sushant S. Satputaley	Effect of Varying Flowrate of Oxy-hydrogen gas addition on Combustion and Emission characteristics	6 months	0.05	0.05	Research article has been published
Dr.H.G.Nagpure	"EFFECT OF CHANGE IN START UP CYCLE TIME ON TRANSIENT THERMALSTRESSES IN STEAM TURBINE ROTOR "	6 months	0.03	0.03	Research article has been published
Dr.H.G.Nagpure	Green's Function A Mathematical Approach	6 months	0.03	0.03	Research article has been published
Dr.H.G.Nagpure	Green's Function An Approach for Estimation of Transient Thermal Stresses	6 months	0.03	0.03	Research article has been published
Dr.Minhaj Ahemad	Investigation and modeling of electric vehicle enablers (EVE)	6 months	0.17	0.17	Research article has been published
Dr.Minhaj Ahemad	DEVELOPMENT OF ERGONOMICALLY DESIGNED BACK MOUNTED SOLID FERTILIZER DISPENSER	6 months	0.30	0.30	Research article has been published
Dr. M A Hayat	An Ergonomic Handle bar for E-Bicycle	6 months	0.30	0.30	Research article has been published
			Amount received (Rs.): 0.91		

Total amount (Lacs) received for the past 3 years : 2.92

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	Computer Aided Design	20	1.Desktop PC (30Nos.) 2.Softwares (Autodesk+SolidWorks+ Hypermesh)	30 Hrs	Rama Bondre	Lab Attendant	ITI
2	Mechatronics	20	1.Basic sensor and actuator module 2.Analog to digital and digital to analog converter 3.PLC trainer 4. 100W 110V AC welding machine (Electrical)	20 Hrs	Rama Bondre	Lab Attendant	ITI
3	Materials Engineering	20	1.Brinell Rockwell Hardness Tester 2.Belt Grinder (Both side Wheel) 3.Muffle Furnace 4.Metallurgical Microscope 5. Spectral Emission Spectroscopy 6. X-ray Diffractometer	6 Hrs	Pravin Hemke	Lab Assistant	ITI
4	Metrology & Mechanical Measurements	20	1.LVDT Model with Micrometer 2.Strain Gauge Measurement 3.Capacitive Pick-Up 4.Digital Micrometer 5. Slip Gauge (Set of 50) 6. Slip Gauge	6 Hrs	Pravin Hemke	Lab Assistant	ITI

5	Engineering Drawing	20	1.Models and charts for illustrating various machine components	16 Hrs	Rama Bondre	Lab Attendant	ITI
6	Automation in Production	20	1.CNC Trainer Lathe,MCL-12 2.CNC Trainer Mill ,HEM-12 3.Desktop PC with accessories	12 Hrs	Shivkesh Maskare	Lab Assistant	Diploma
7	Strength of Material	20	1.Universal Testing Machine (Capacity - 40 MT) 2.Shear Test Attachment for UTM 3.Mechanical	16 Hrs	Pravin Hemke	Lab Assistant	ITI
8	Fluid Mechanics & Hydraulic Machines	20	1.Reciprocating Pump 2.Variable Speed Centrifugal Pump 3.Pelton Wheel Test Rig 4.Orifice	16 Hrs.	Shivkesh Maskare	Lab Assistant	Diploma
9	Thermal Engineering	20	1.4-Cylinder 4-Stroke Petrol Engine Test Rig. 2.Reciprocating Two stage Air compressor 3.Rotary	10 Hrs	Nitin Supatkar	Lab Attendant	ITI
10	Dynamics of Machines	25	1.Dynamic make shaft critical, speed apparatus 2.Dynamic make balancing of rotating mass	6 Hrs	Pravin Hemke	Lab Assistant	ITI
11	Heat Transfer	20	1.Stefan Boltzmann's constant Apparatus 2.Parallel & Counter type Heat Exchanger Apparatus 3.Force	8 Hrs	Nitin Supatkar	Lab Attendant	ITI
12	Manufacturing Processes	20	1.Blower 2.Spot Welding M/C 3.MIG Welding M/C 4.Permeability Meter 5.Molding Box 2PC 6.Molding	6 Hrs	Pravin Yerekar, Vijay H.	Lab Assistant	ITI
13	Machining Processes	20	1.Semi Norton Lathe 2.Run up Shaper 3.Bench grinder 4.Capstan Lathe 5.Horizontal Surface	6 Hrs	M.A. Ansari, Ganesh Th	Lab Assistant	ITI

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Computer Aided Design	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 4 Lab is well illuminated and ventilated 5 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 6 Regular check up and charging of Fire fighting equipments is carried out on routine basis by maintenance department from outside agency. 7 Laboratory being located at second floor of building is provided with twin entry/exit points with separate fire exit staircase. 8 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories. 9 Institute is having fire fighting and fire alarm system (Hydrant and Fire Extinguishers) installation as per the National Building code.

2	Mechatronics	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 4 Lab is well illuminated and ventilated 5 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 6 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 7 Regular checkup and charging of Firefighting equipment's is carried out on routine basis by maintenance department from outside agency. 8 Laboratory being located at second floor of building is provided with twin entry/exit points with separate fire exit staircase. 9 Standard operating procedure (SOP) of all Major equipment's are available in the laboratories 10 Institute is having firefighting and fire alarm system (Hydrant and Fire Extinguishers) installation as per the National Building code. 11 Lab are provided with exhaust fans, effective safety arrangements with emergency exits
3	Material Engineering	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Lab is well illuminated and ventilated 4 Laboratory takes the care regarding handling of chemicals or other materials which may turn out be hazardous in nature. 5 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 6 Laboratory being located at second floor of building is provided with twin entry/exit points with separate fire exit staircase. 7 Institute is having firefighting and fire alarm system (Hydrant and Fire Extinguishers) installation as per the National Building code.
4	Metrology & Mechanical Measurements	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 7 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 8 Institute is having firefighting and fire alarm system (Hydrant and Fire Extinguishers) installation as per the National Building code. 9 Regular checkup and charging of Firefighting equipment's is carried out on routine basis by maintenance department from outside agency. 10 Laboratory being located at second floor of building is provided with twin entry/exit points with separate fire exit staircase.

5	Engineering Drawing	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 4 Lab is well illuminated and ventilated 5 Laboratory being located at second floor of building is provided with twin entry/exit points with separate fire exit staircase. 6 Institute is having fire fighting and fire alarm system (Hydrant and Fire Extinguishers) installation as per the National Building code.
6	Automation in Production	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated, 6 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 7 Lab equipments are installed with proper foundation as per requirement, ensuring safety. 8 Regular check up and charging of Fire fighting equipments is carried out on routine basis by maintenance department from outside agency. 9 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories.
7	Strength of Material	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories 7 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 8 During workshop practical Apron and Leather shoes are compulsory to avoid accidents / injury. 9 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 10 Lab equipments are installed with proper foundation as per requirement, ensuring safety. 11 Regular check up and charging of Fire fighting equipments is carried out on routine basis by maintenance department from outside agency.

8	Fluid Mechanics & Hydraulic Machines	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories 7 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 8 Lab equipment's are installed with proper foundation as per requirement, ensuring safety. 9 Regular checkup and charging of Firefighting equipment's is carried out on routine basis by maintenance department from outside agency. 10 The underground water storage tank is fully covered and cleaned regularly.
9	Thermal Engineering	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 7 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 8 In Energy conversion lab toxic fumes produced by IC engines are safely released outside lab premises to avoid air pollution in the lab 9 Lab equipments are installed with proper foundation as per requirement, ensuring safety. 10 Regular check up and charging of Fire fighting equipments is carried out on routine basis by maintenance department from outside agency. 11 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories
10	Kinematics & Dynamics of Machines	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 7 Lab equipment's are installed with proper foundation as per requirement, ensuring safety. 8 Regular checkup and charging of Firefighting equipment's is carried out on routine basis by maintenance department from outside agency. 9 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories

11	Heat Transfer	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories 7 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property.
12	Manufacturing Processes	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories 7 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 8 During workshop practical Apron and Leather shoes are compulsory to avoid accidents / injury. 9 Use of safety goggles and gloves is compulsory to avoid accidents / injury during welding practical. 10 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 11 Lab equipments are installed with proper foundation as per requirement, ensuring safety. 12 Regular check up and charging of Fire fighting equipments is carried out on routine basis by maintenance department from outside agency.
13	Machining Processes	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories 7 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 8 During workshop practical Apron and Leather shoes are compulsory to avoid accidents / injury. 9 Use of safety goggles and gloves is compulsory to avoid accidents / injury during welding practical. 10 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 11 Lab equipments are installed with proper foundation as per requirement, ensuring safety. 12 Regular check up and charging of Fire fighting equipments is carried out on routine basis by maintenance department from outside agency.

14	Refrigeration & Air Conditioning	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Standard operating procedure (SOP) of all Majuro equipment's is available in the laboratories. 7 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 8 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 9 Lab equipment's are installed with proper foundation as per requirement, ensuring safety. 10 Regular checkup and charging of Firefighting equipment's is carried out on routine basis by maintenance department from outside agency.
15	Project Lab	Following are the safety measures observed in all the laboratories: ☐ Display of basic safety instructions related to laboratory. ☐ Safety instructions given by faculty and technical staff before performing experiments. ☐ Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories ☐ Safety guards are provided for machines as per requirement. ☐ Foundations are provided as per machine specifications. ☐ Periodic inspection of electrical fittings, lab equipment and civil structure. ☐ Fire extinguishers are provided in the vicinity. ☐ Provision of First-aid box. ☐ MCB's for all electrical installations. Workshop Safety measures for mechanical workshop: ☐ Wearing Apron and Leather shoes is compulsory. ☐ Use of safety goggles and hand-gloves during welding. ☐ Loose clothing to be avoided. ☐ Instructions about do's and don'ts while using workshop facilities and tools are displayed. 1 Laboratory has fire extinguisher in its vicinity to ensure fire safety. 2 Laboratory has first aid box in its vicinity 3 Laboratory has provision of guards to all the moving components and parts of the machine. 4 Maintenance department of Institute inspects and maintain all electrical installations including leakage and earthing problems with the help of electricians and supervisor 5 Lab is well illuminated and ventilated 6 Lab are provided with exhaust fans, effective safety arrangements with emergency exits 7 Teaching and supporting staff instruct students about the safety measures to be taken during experimentation before start of experiment to avoid injury or loss to property. 8 During Project practical Apron and Leather shoes are compulsory to avoid accidents / injury. 9 Use of safety goggles and gloves is compulsory to avoid accidents / injury during welding practical. 10 Students are instructed to maintain safe distance and avoid loose clothing, long Hair, near rotating parts of machinery 11 Lab equipment's are installed with proper foundation as per requirement, ensuring safety. 12 Regular checkup and charging of Firefighting equipment's is carried out on routine basis by maintenance department from outside agency. 13 Standard operating procedure (SOP) of all Majuro equipment's are available in the laboratories.

D3. Project Laboratory/Research Laboratory

About the Project Lab

The Project Lab is an integral part of the Mechanical Engineering curriculum designed to provide students with practical exposure to engineering problem-solving and product development. In this laboratory, students undertake major projects individually or in groups under the guidance of faculty members. The lab enables students to apply theoretical knowledge gained during the course to real-world engineering applications. Students are encouraged to identify industrial or societal problems and develop innovative, economical, and sustainable solutions. The Project Lab promotes creativity, technical skills, teamwork, and research aptitude among students. Activities such as design, analysis, fabrication, testing, and performance evaluation are carried out during the project work. Students also gain experience in the use of modern engineering tools, software, and workshop practices. It bridges the gap between academic learning and industrial requirements, thereby enhancing employability and entrepreneurial abilities. The Project Lab ultimately prepares students for professional engineering practice and higher studies.

Objectives:-

1. To develop the ability to apply engineering knowledge for solving practical problems.
2. To enhance skills in design, fabrication, analysis, and testing of mechanical systems.
3. To encourage innovation, creativity, and research-oriented thinking among students.
4. To develop teamwork, communication, and project management skills.
5. To familiarize students with modern engineering tools, software, and industrial practices.

Outcomes:

1. Students will be able to identify and solve real-life mechanical engineering problems.
2. Students will demonstrate the ability to design and develop engineering systems or products.
3. Students will gain hands-on experience in manufacturing, testing, and analysis techniques.
4. Students will improve their technical presentation, documentation, and teamwork skills.
5. Students will be capable of using modern engineering tools and adopting professional engineering practices.

Project laboratory is developed to facilitate students to carry out project related activities. The approximate area of project laboratory is 160 sq. meter in the vicinity of workshop. The details of facilities are as under.

- Ø Display of selected major projects done in each academic year.
- Ø Project reports in soft and hard forms are available both at the project laboratory and the college library.
- Ø Fabrication facilities such as MIG welding, Tig welding, Radial drilling machine, Pipe bending machine, hardware, raw material, tools and other mechanical workshop facilities are available.
- Ø Project lab is utilized by 6th -7th semester students for major projects, 3rd and 4th semester for micro & mini-project work and members of SAE-India collegiate club for vehicle fabrication.
- Ø Apart from the facilities available in the project Lab the students are entitled to use any of the facilities available in the workshop and any other lab as per the requirement of their project.
- Ø Project lab facility is available for students to use after academic hours.

Table No 7.5.1: List of Project Laboratory/research laboratory / Centre of excellence

S.N.	Name of the Laboratory
1	Project Laboratory
2	Research Laboratory

Details of the machines and tools available in the project Lab are as follows:

Sr.No.	Name of the Laboratory	Name of the major equipment/Software's	Purpose for creating Facility	Utilization	Relevance to POs /PSOs
1	Project Lab	TIG Welding Set (SP1805) TIG Welding Set (SMT25) Radial Drilling M/C Pipe Bending Machine Surface Grinder Jig Saw Machine Hydraulic Pipe bending machine Hydraulic Press fit Machine MIG Welding Machine	Students Projects Development	For fabrication work related to Mini, Micro, Major projects and any other students related projects. Also manufacturing of ATV, Formula and Electric – Formula vehicles	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2

List of Working Models / Project in the Project Lab:

AY 2025-26

Sr No.	Group Members	Guide	Title	Area	Relevance to POs/PSOs
1	Nikita Bhujade	Prof. Shantanu .N. Kolharkar	Design and development of cam operated dual action press for production of washer	Design	PO1,PO2,PO3, PO4, PO5, PO6,PO7,PO8. PO9,PO10,PO11
	Rishi Pandey				
	Shreyash Patil				
	Sankoch Thamke				
2	Prathamesh Chure	Prof. M. K. Bhadke	Design and fabrication of scissor lift.	Design	PO1,PO2,PO3, PO4, PO5, PO6,PO7,PO8. PO9,PO10,PO11 , PSO1
	Rajat Sawarbandhe				
	Harshit Pahune				
	Aman Raut				

3	Yashshree Kalambe	Dr. S.S. Satputaley	Development of Smart System to Control Nutrient and Environment Conditions for Hydroponic Plant Chamber	Interdisciplinary	PO1,PO2,PO3, PO4, PO5, PO6,PO7,PO8. PO9,PO10,PO11
	Sanika Salunke				
	Tanmay Ingole				
	Samrat Dhamgaye				
	Angelina Lyte				
	Joseph Binoy				
	Mithilesh Dudhankar				

AY 2024-25

Sr No.	Group Members	Guide	Title	Area	Relevance to POs/PSOs
1	Anurag Shende	Prof. Shantanu N. Kolharkar	Development of Automated Product Sorting System	Interdisciplinary	PO1,PO2,PO 3,PO4, PO5, PO6,PO7 ,PO8,PO9,PO10, PO11
	Atharva Sapate				
	Kartik Mudliyar				
	Ojas Baban Ingle				
	Ritesh Uday Tiwari				
2	Aniket Wadhai	Prof. Shripad V Deo	Design and Fabrication of Cold Press Oil Extraction Machine	Design	PO1,PO2,PO 3, PO5, PO6,PO7 ,PO8,PO9,PO10, PO11,PSO1
	Anuj Pachkawde				
	Ratnesh Durge				
	Tejas Shethe				
3	Achyut Bansod	Dr. Pravin S. Nerkar	Design and Development of Automatic Boom Barrier Gating System for SVP CET Nagpur	Interdisciplinary	PO1,PO2,PO3,PO4 PO5,PO6,PO7,PO8 PO9,PO10, PO11
	Angelina Lyte				
	Joseph Binoy				
	Mithilesh Dudhankar				

AY 2023-24

Sr No.	Group Members	Guide	Title	Area	Relevance to POs/PSOs
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1	Akash Wasnik	Prof N. Nagpurkar	Design and fabrication of xy plotter	PD	PO1,PO2,PO3, ,PO8,PO9,PO10 , PO11,PO12
	Sarang Jodh				
	Shashwat Mujumdar				
2	Vinayak Goswami	Prof. Mohd. Saifullah Khan	Design and Fabrication of an Automated Coconut Scraper Machine	Design	PO1,PO2,PO3, PO4, PO5, PO6,PO7,PO8,PO9,PO10 , PO11,PO12,PSO1
	Chetan Gabhane				
	Vaishnavi Ambatkar				
	Subhojyoti Chakraborty				
3	Pranit Mankar	Prof. Atul Kumar Saxena	Development of Fire fighting robot with wireless surveillance	Interdisciplinary	PO1,PO2,PO3, PO4, PO5, PO6,PO7,PO8,PO9,PO10 , PO11,PO12,PSO1
	Piyush Gonnade				
	Vedant Ingulkar				
	Yash Surkar				
	Om Sorte				
4	Aditya Gotmare	Prof. Sandhya Umare	Remote Control Operated Solar Lake Surface Cleaner	Interdisciplinary	PO1,PO2,PO3, PO4, PO5, PO6,PO7,PO8,PO9,PO10,PO11,PO12
	Ankit Nandanwar				
	Gaurav Naidu				
	Mihir Shrawane				
	Pranay Bodhanwar				
5	Gaurav Hadge	Dr. Minhaj Ahemad	Sustainable Streets: Sensor driven lighting solutions during non-effective hours to reduce energy consumption	Design and Fabrication for sustainable development	PO1,PO2,PO3, PO4, PO6,PO7,PO8,PO9,PO10, , PO11,PO12
	Gourav Paithankar				
	Aman Sontakke				
	Rugwed Kadu				
	Anush Narnaware				



Display of Project/Working modal in Project Laboratory

SOP for Best Project Award for Final Year Students

Introduction

The Best Project Award for Final Year Students aims to recognize exceptional projects that demonstrate innovation, practicality, and social impact. This SOP provides a comprehensive framework detailing the eligibility criteria, nomination process, formation of the Evaluation Committee, and guidelines for Financial Assistance. These elements are essential for conducting a fair, transparent, and rewarding process for the Best Project Award for Final Year Students.

Eligibility Criteria

To be eligible for the Best Project Award, final year student projects must meet the following criteria:

- Ø Projects must be completed within the academic year .
- Ø Projects should align with the curriculum and learning objectives of their respective departments.
- Ø Only projects with tangible outcomes, such as prototypes, software applications, innovative solutions will be considered.
- Ø Project groups must have published at least one paper in reputed conferences, peer-reviewed journals, or have a patent published related to their project.

Nomination Process:

Department head or project coordinator will nominate eligible projects based on their internal assessment of the projects quality, impact, and relevance. (Max. 08 for intake of 60 and Max. 16 for intake of 120)

Evaluation Committee

An expert committee appointed by the R&D Cell will evaluate the nominated projects. The committee shall consist of the following members:

- Ø External Expert Evaluator from Academics.
- Ø Expert Evaluator from Industry.
- Ø R&D Coordinator/Co-coordinator.
- Ø Project Coordinator (for coordination purposes only).

Ø Financial Assistance

Ø Top three projects from departments with a 60 student intake and the top six projects from departments with a 120 student intake will be awarded financial assistance.

2025-26

Rank	Title of Project	Name of Students	Financial Assistance as per R&D policy (In Rs.)	Total
1	Performance Evaluation of Cutting Tool with Cryogenic Treatment	Khushi Jaiswal , Jayesh Gajbhiye , Pratik Peshatwar , Ashley Joseph	10000.00	22500.00
2	Humidity controlled ducted air - conditioning system with integrated bacteria purification for cattle shed	Nishant Kudkelwar,Rupal Girde, Sudhanshu Dudhankar, Gausul Ajam	7500.00	
3	Design and fabrication of scissor lift	Prathamesh Chure Rajat Sawarbandhe Rajat Sawarbandhe Harshit Pahune Aman Raut	5000.00	

Research Laboratory

The Research Laboratory is established to promote research, innovation, experimentation, and technical skill development among students and faculty members. The laboratory provides an advanced platform for conducting interdisciplinary research activities, project development, prototype design, testing, simulation, and analysis in various engineering and technological domains.

The laboratory is equipped with modern instruments, software tools, computing facilities, and experimental setups to support academic research, consultancy work, industrial problem-solving, and collaborative projects. It encourages students and researchers to develop practical solutions for real-world engineering challenges through experimentation, data analysis, and innovation. For experimentation they can use the research facilities available in the other laboratories in the department.

The laboratory also supports undergraduate, postgraduate, and doctoral research activities by providing facilities for project implementation, technical training, publication work, patent development, and industry interaction. It plays an important role in strengthening research culture, outcome-based education, and continuous improvement aligned with NBA accreditation standards.

Objectives of the Research Laboratory

1. To promote research and innovation among students and faculty members.
2. To provide advanced facilities for software tools, testing, and analysis.
3. To encourage interdisciplinary research and development activities.
4. To support undergraduate, postgraduate, and Ph.D. research work.
5. To develop practical and industry-oriented technical solutions.
6. To enhance technical competency and research skills of students.
7. To encourage publication of research papers, patents, and innovative projects.
8. To establish collaboration with industries, research organizations, and academic institutions.
9. To support consultancy, funded projects, and product development activities.
10. To create an environment for continuous learning, creativity, and technological advancement.

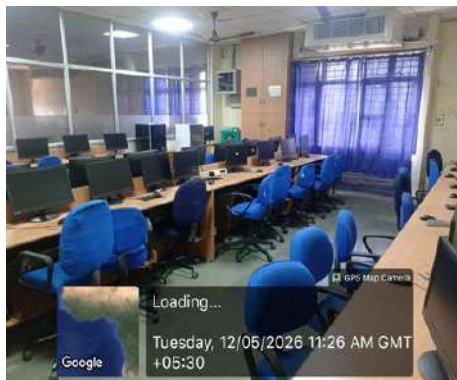
Major Facilities Available in the Laboratory.

<u>Research Lab</u>				
Sr. No.	Particulars	Quantity	Year (Pur)	Investment (Rs)
A: Computer Hardwares & Peripherals				
1	Desktop PC (CPU): <i>Dell make:3470 8th generation i3</i>	28	2019	9,46,400/-
2	Desktop PC (CPU): <i>Dell make:3670 8th generation i5</i>	2	2019	1,02,500/-
3	Desktop PC (Monitor): <i>AOC Make: 22" LED</i>	28	2019	1,73,600/-
4	Desktop PC (Monitor): <i>Dell Make: 24" LED</i>	2	2019	18,200/-
5	Online UPS <i>Liebert MakeP8:6 KVA</i>	1	2017	84,095/-
6	Projector <i>Epson S-41</i>	1	2019	26,800/-
7	Printer <i>HP Laserjet1020</i>	1	2012	11,000/-
B: Softwares				
1	Autodesk Education <i>Completepackage (Freeware)</i>	100	2025	
2	Altair Hypermesh (Freeware)	50	2025	
3	SolidWorks -2022 <i>Education License</i>	50 User	2023	4,95,600/-
C : 3-D Printer				
1	3-D Printer <i>DBZ make:Accucraft i250</i>	1	2019	2,32,460/-
2	3-D Printer <i>Crealty K1Max</i>	1	2024	8,50,78/-

Expected Outcomes of the Research Laboratory.

1. Enhancement of research culture and innovation ecosystem within the institute.
2. Increased participation of students and faculty in research and development activities.
3. Publication of quality research papers in reputed journals and conferences.
4. Development of patents, prototypes, and innovative products.

5. Improvement in technical knowledge, analytical ability, and practical skills of students.
6. Strengthening of industry-institute interaction through collaborative projects and consultancy.
7. Generation of funded research projects and sponsored activities.
8. Development of problem-solving and critical-thinking abilities among students.
9. Support for outcome-based education and continuous quality improvement.
10. Contribution toward institutional excellence and NBA accreditation requirements.



Research Laboratory

No. of Ph.D. students' enrollment and graduated in the Department during the assessment period

S.N.	Item	2025-26	2024-25	2023-24	2022-23
1	No. of students enrolled for Ph.D. in the Department	5	6	6	3
2	No. of Ph.D. students graduated in the Department	-	1	2	-

Research Publication

S.No	Title of the Book/Publication	Author	Conference Details
1	Experimental Investigation of Diesel-Ethanol Reactivity-Controlled Compression Ignition Engine Operating at Multipal Load Conditions	Dr. Sushant S. Satputaley, Mr. Santosh Alone	Experimental Investigation of Diesel-Ethanol Reactivity-Controlled Compression Ignition Engine Operating at Multipal Load Conditions

2	From waste bottles to rPET FDM Filaments: Process Chain and Comprehensive Characterization of Recycled PET for Fused Depositing Material	Prof.Tushar Anneyrao, Dr G R Boob,Dr. Sushant S. Satputaley, Prof. Sandhya Umre	From waste bottles to rPET FDM Filaments: Process Chain and Comprehensive Characterization of Recycled PET for Fused Depositing Material
3	Evaluation of Tyre Pyrolysis Oil-Diesel Blends as Alternative Fuels for Sustainable HCCI Engine Applications	Mr. Dilip Borkar, Dr. Sushant S. Satputaley	Evaluation of Tyre Pyrolysis Oil-Diesel Blends as Alternative Fuels for Sustainable HCCI Engine Applications
4	Performance Analysis of a Heat exchanger with water as coolant	Mr. V.P.Ate ,Dr. P. B. Lanjewar	Performance Analysis of a Heat exchanger with water as coolant
5	Modelling the Effects of Shift work on Worker Health and Job Performance in the Indian Foundry Industry	Dr. Manish Bhadke,Dr. Minhaj Ahemad	Modelling the Effects of Shift work on Worker Health and Job Performance in the Indian Foundry Industry
6	A Systematic Review of Solar Drying Technologies for Agricultural Product	Mr.Sanket Chaudhary , Dr.Pramod B. Lanjewar	A Systematic Review of Solar Drying Technologies for Agricultural Product
7	Experimental Investigation of Drying Kinetics for Dragon Fruit using Microwave Drying Method	Mr.Sanket Chaudhary , Dr.Pramod B. Lanjewar	Experimental Investigation of Drying Kinetics for Dragon Fruit using Microwave Drying Method
8	Experimental Evaluation of Drying Characteristics and Kinetics of Dragon Fruit using an Electric Oven	Mr.Sanket Chaudhary , Dr.Pramod B. Lanjewar	Experimental Evaluation of Drying Characteristics and Kinetics of Dragon Fruit using an Electric Oven
9	Augmentation of Convective Heat Transfer using TiO/WATER nanofluid	Prof.Vijay Ate, Dr.Pramod B. Lanjewar, Dr Bijendra Bhaskar	Augmentation of Convective Heat Transfer using TiO/WATER nanofluid
10	Investigating the effects of Riser Tube Configuration on the Performance of Photovoltaic-Thermal Systems using Nanofluids: A Review.	Dr. Pramod B. Lanjewar	Investigating the effects of Riser Tube Configuration on the Performance of Photovoltaic-Thermal Systems using Nanofluids: A Review.

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 $((NS1*0.8) + (NS2*0.2)) / (\text{No. of required faculty (RF4)})$; Percentage= $((NS1*0.8) + (NS2*0.2)) / RF$
2023-24(CAYm2)	720	36	19	35	62
2024-25(CAYm1)	720	36	19	48	69
2025-26(CAY)	780	39	20	47	65

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 2025-26	Actual Expenses in 2025-26 till	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
Infrastructure Built-Up	150000000	118234860	155000000	53529901	85000000	23206738	20000000	20086691
Library	1000000	114174	1600000	823097	1700000	817711	1300000	1334697
Laboratory equipment	39000000	17679448	28000000	17333423	28000000	38463020	25700000	28042864
Teaching and non-teaching staff salary	296247000	198374839	233200000	256244944	202900000	221033239	163500000	180533676
Outreach Programs	0	0	0	0	0	0	0	0
R&D	11250000	25088063	3000000	3558587	3000000	4349831	500000	2135971
Training, Placement and Industry linkage	6250000	7022914	16700000	8008155	8380000	5263237	4600000	8953933
SDGs	0	0	0	0	0	0	0	0
Entrepreneurship	0	0	0	0	0	0	0	0
Others, specify	71500000	73656601	75027000	67384713	66576000	60026946	46920000	74832552
Total	575247000	440170899	512527000	406882820	395556000	353160722	262520000	315920384

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 2025-26	Actual Expenses in 2025-26 till	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
Laboratory equipment	2000000	780700	2500000	1844785	2000000	563251	2850000	2023706
Software	0	0	0	0	0	0	550000	495600
SDGs	0	0	0	0	0	0	0	0
Support for faculty development	292500	76824	242500	173977	407500	93541	442500	149308
R & D	3220000	42835	3150000	182500	2300000	0	1000000	30168
Industrial Training, Industry expert, Internship	417500	367477	492500	210307	682500	392782	567500	966726
Miscellaneous Expenses	950000	240160	560000	1399362	795000	695765	445000	546214
Total	6880000	1507996	6945000	3810931	6185000	1745339	5855000	4211722