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: 10717	**Date of Submission**: 12-06-2025

PART A- Profile of the Institute

A1.Name of the Institute: Sanjivani Rural Educational Society's Sanjivani College of Engineering	
Year of Establishment : 1983/1994	Location of the Institute: Sanjivani College Road, opposite Sanjivani Factory, near P.O. Shingnapur
A2. Institute Address:POST:-SHINGNAPUR KOPARGAON DIST:-AHMEDNAGAR	
City:KOPARGAON	State:Maharashtra
Pin Code:423603	Website:www.sanjivanicoe.org.in
Email:PRINCIPAL@SANJIVANICOE.ORG.IN	Phone No(with STD Code):-
A3. Name and Address of the Affiliating University (if any):	
Name of the University :	City: Pune
State : Maharashtra	Pin Code: 411007
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: **8**
- No. of PG programs: **6**

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

Sr.No.	Discipline	Level of program	Name of the program	Year of Start	Year of Closed	Name of The Department
1	Engineering & Technology	UG	Civil Engineering	1983	--	Civil Engineering
2	Engineering & Technology	UG	Computer Engineering	1990	--	Computer Engineering
3	Engineering & Technology	PG	Computer Engineering	2011	--	Computer Engineering
4	Engineering & Technology	PG	Cyber Security	2021	--	Information Technology
5	Engineering & Technology	PG	Digital Systems	2011	--	Electronics and Telecommunication Engineering
6	Engineering & Technology	UG	Electrical Engineering	2017	--	Electrical Engineering
7	Engineering & Technology	UG	Electronics & Computer Engineering	2020	--	Electronics and Computer Engineering
8	Engineering & Technology	UG	Information Technology	2001	--	Information Technology
9	Engineering & Technology	PG	Machine Design	2004	--	Mechanical Engineering
10	Engineering & Technology	UG	Mechanical Engineering	1983	--	Mechanical Engineering
11	Engineering & Technology	UG	Mechatronics Engineering	2020	--	Mechatronics Engineering

12	Engineering & Technology	UG	Structural Engineering	2020	--	Structural Engineering
13	Engineering & Technology	PG	Structural Engineering	2020	--	Structural Engineering
14	Management	PG	Master of Business Administration	2010	--	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
Civil Engineering	No	Civil Engineering	UG
Mechanical Engineering	No	Mechanical Engineering	UG
Information Technology	No	Information Technology	UG

Table No. A7.2: Allied Department(s) to the Department of the program considered for accreditation as above.
Cluster ID. Name of the Department (in table no. A7.1) Name of allied Departments/Cluster (for table no. A7.1)

No Record

PART-B: Program information

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

Table No. B1: Program details.
A. List of the Programs Offered by the Department:

SR.NO.	PROGRAM NAME	PROGRAM APPLIED LEVEL	YEAR OF START / YEAR OF CLOSED	SANCTIONED INTAKE	INCREASE/DECREASE INTAKE (if any)	YEAR OF INCREASE/DECREASE	CURRENT INTAKE	YEAR OF AICTE APPROVAL	AICTE/COMPETENT AUTHORITY ARROVAL DETAILS	ACCREDITATION STATUS	FROM	TO	NO. OF TIMES PROGRAM ACCREDITED	PROGRAM DURATION
1	Mechanical Engineering	UG	1983 / --	60	Yes	2022	120	2022	F.No.Western/1-10970071185/2022/EOA	Granted accreditation for 3 years for the period (specify period)	2022	2025	4	4

Sanctioned Intake for Last Five Years for the Machine Design	
Academic Year	**Sanctioned Intake**
2024-25	120
2023-24	120
2022-23	120
2021-22	180
2020-21	180
2019-20	180

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 :	P.M. Patare

B. Nature of appointment:	Regular
C. Qualification:	Ph.D

B3. Program Details

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

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2024-25 (CAY)	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)	2020-21 (CAYm4)	2019-20 (CAYm5)	2018-19 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	120	120	120	180	180	180	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	120	120	120	103	102	170	122
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	14	20	111	109	62	19
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	16	18	17	23	19	12	7
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	136	152	157	237	230	244	148

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)	120	120	16	113.33
2023-24 (CAYm1)	120	120	18	115.00
2022-23 (CAYm2)	120	120	17	114.17

Average [(ER1 + ER2 + ER3) / 3] = 114.17≡ 100

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

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

Item	(2020-21) LYG	(2019-20) LYGm1	(2018-19) LYGm2
A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).	289.00	244.00	148.00
B=No. of students who graduated from the program in the stipulated course duration	189.00	203.00	109.00
Success Rate (SR)= (B/A) * 100	65.40	83.20	73.65

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 74.08

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)	7.24	7.25	6.67
Y=Total no. of successful students	132.00	126.00	117.00
Z=Total no. of students appeared in the examination	138.00	137.00	126.00
API [X*(Y/Z)]	6.93	6.67	6.19

Average API[(AP1+AP2+AP3)/3] : 6.60

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)	7.26	6.63	7.10
Y=Total no. of successful students	138.00	197.00	221.00
Z=Total no. of students appeared in the examination	146.00	228.00	235.00
API [X * (Y/Z)]	6.86	5.73	6.68

Average API [(AP1 + AP2 + AP3)/3] : 6.42

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)	6.72	6.79	7.55
Y=Total no. of successful students	195.00	207.00	222.00
Z=Total no. of students appeared in the examination	197.00	221.00	224.00
API [X*(Y/Z)]:	6.65	6.36	7.48

Average API [(AP1 + AP2 + AP3)/3] : 6.83

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	289.00	242.00	139.00
X=No. of students placed	179.00	195.00	136.00
Y=No. of students admitted to higher studies	2.00	4.00	2.00
Z= No. of students taking up entrepreneurship	2.00	1.00	1.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	63.32	82.64	100.00

Average Placement Index = (P_1 + P_2 + P_3)/3: 81.99 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	P.M. Patare	XXXXXXX05G	Ph.D	SRTMU, Nanded	Design	23/08/2004	20.9	Assistant Professor	Associate Professor		Regular	Yes		Yes
2	S. V. Bhaskar	XXXXXXX00N	Ph.D	SPPU, Pune	Design	11/01/2000	25.4	Assistant Professor	Professor	01/02/2019	Regular	Yes		No
3	S. S. Ingle	XXXXXXX69A	Ph.D	SRTMU, Nanded	Thermal	06/03/2002	23.3	Assistant Professor	Professor	01/02/2019	Regular	Yes		No
4	S. P. Palekar	XXXXXXX08G	Ph.D	SVNIT,Surat	Design	26/06/2009	15.11	Assistant Professor	Associate Professor	01/08/2016	Regular	Yes		No
5	L. S. Dhamande	XXXXXXX20G	Ph.D	SPPU, Pune	Design	24/11/2003	21.6	Assistant Professor	Associate Professor	01/02/2019	Regular	Yes		No
6	D. P. Bhaskar	XXXXXXX53M	Ph.D	SPPU, Pune	CAD-CAM	01/09/2012	12.8	Associate Professor	Associate Professor	01/09/2012	Regular	Yes		No
7	K. C. Bhosale	XXXXXXX50J	Ph.D	SPPU, Pune	Design	30/07/2009	15.10	Assistant Professor	Associate Professor	01/10/2021	Regular	Yes		No
8	P. W. Ingle	XXXXXXX97A	M.E.	SPPU, Pune	Heat Power	29/08/2006	18.9	Assistant Professor	Assistant Professor		Regular	Yes		No
9	H. P. Varade	XXXXXXX65D	M.E.	SPPU, Pune	Design	27/12/2007	17.5	Assistant Professor	Assistant Professor		Regular	Yes		No
10	S. V. Fartale	XXXXXXX24F	M.E.	SPPU, Pune	Design	16/08/2008	16.9	Assistant Professor	Assistant Professor		Regular	Yes		No
11	Y. H. Ahire	XXXXXXX75N	M.E.	Dr.BAMU,Aurangabad	Heat Power	22/08/2008	16.9	Assistant Professor	Assistant Professor		Regular	Yes		No
12	V. P. Bhaurkar	XXXXXXX67Q	M.E.	SPPU, Pune	Design	07/01/2009	16.5	Assistant Professor	Assistant Professor		Regular	Yes		No
13	I. I. Sayyad	XXXXXXX46N	Ph.D	SPPU, Pune	Design	18/08/2009	15.9	Assistant Professor	Assistant Professor		Regular	Yes		No
14	N. D. Sadaphal	XXXXXXX06B	M.E.	SPPU, Pune	Design	23/02/2010	15.3	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Y. A. Bhavsar	XXXXXXX64J	M.E.	SPPU, Pune	Design	23/02/2010	15.3	Assistant Professor	Assistant Professor		Regular	Yes		No
16	S. R. Thorat	XXXXXXX74J	Ph.D	SPPU, Pune	Design	09/07/2010	14.11	Assistant Professor	Assistant Professor		Regular	Yes		No
17	S. M. Gujrathi	XXXXXXX61E	M.E.	SPPU, Pune	Design	08/11/2012	12.7	Assistant Professor	Assistant Professor		Regular	Yes		No

18	A. A. Joshi	XXXXXXX87D	M.E.	SPPU, Pune	Design	04/02/2013	12.3	Assistant Professor	Assistant Professor		Regular	Yes		No
19	V. J. Suryawanshi	XXXXXXX13M	M.E.	SPPU, Pune	Design	05/07/2012	12.10	Assistant Professor	Assistant Professor		Regular	Yes		No
20	P. A. Bojage	XXXXXXX76N	M.E.	SPPU, Pune	Design	03/06/2015	10	Assistant Professor	Assistant Professor		Regular	Yes		No
21	N. S. Surner	XXXXXXX32R	M.E.	VIT, Vellore	Design	22/06/2015	9.11	Assistant Professor	Assistant Professor		Regular	Yes		No
22	J. B. Ashtekar	XXXXXXX79J	M.E.	SPPU, Pune	Design	13/06/2016	9	Assistant Professor	Assistant Professor		Regular	Yes		No
23	P. N. Patil	XXXXXXX92M	M.E.	SPPU, Pune	Design	21/06/2016	8.11	Assistant Professor	Assistant Professor		Regular	Yes		No
24	A. D. Wable	XXXXXXX06C	Ph.D	SPPU, Pune	Production	22/06/2016	8.11	Assistant Professor	Assistant Professor		Regular	Yes		No
25	R. S. Kolhe	XXXXXXX99C	M.E.	SPPU, Pune	Design	22/02/2022	3.3	Assistant Professor	Assistant Professor		Regular	Yes		No
26	A.B.Bhagwat	XXXXXXX03R	Ph.D	IIT, Bombay	Thermal & Fluid	01/08/2017	6.11	Associate Professor	Associate Professor		Regular	No	16/07/2024	No
27	Sachin Raj	XXXXXXX64D	Ph.D	Anna Univ.	Manufacturing	03/10/2022	1.4	Assistant Professor	Assistant Professor		Regular	No	01/03/2024	No
28	M.V.Nagarhalli	XXXXXXX41N	Ph.D	SRTMU, Nanded	Thermal	03/02/2022	1.11	Professor	Professor	03/02/2022	Regular	No	02/02/2024	No
29	A.V.Damale	XXXXXXX00B	Ph.D	SPPU, Pune	Production	06/08/2007	16.2	Assistant Professor	Associate Professor	01/12/2014	Regular	No	16/10/2023	No
30	A.A.Shaikh	XXXXXXX31G	M.E.	SPPU, Pune	Design	05/06/2014	10	Assistant Professor	Assistant Professor		Regular	No	01/07/2024	No
31	C.M.Pilgar	XXXXXXX18N	Ph.D	Polytechnic University	Thermal	14/11/2022	1.2	Assistant Professor	Assistant Professor		Regular	No	29/01/2024	No
32	N.S.Aher	XXXXXXX10D	M.E.	RGPV Bhopal	Tribology	16/06/2015	7.6	Assistant Professor	Assistant Professor		Regular	No	26/12/2022	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 Department1

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

Description	**CAY(2024-25)**	**CAYm1 (2023-24)**	**CAYm2 (2022-23)**
UG1.B	132	132	198
UG1.C	132	198	198
UG1.D	198	198	198
UG1: Mechanical Engineering	**462**	**528**	**594**
PG1.A	6	6	6
PG1.B	6	6	6
PG1: Machine Design	**12**	**12**	**12**
DS=Total no. of students in all UG and PG programs in the Department	474	540	606
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=** 474	**S2=** 540	**S3=** 606
DF=Total no. of faculty members in the Department	25	27	29
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=** 25	**F2=** 27	**F3=** 29
FF=The faculty members in F who have a 100% teaching load in the first-year courses	4	4	4
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 22.57**	**SFR2= 23.48**	**SFR3= 24.24**
Average SFR for 3 years	**SFR= 23.43**		

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)]**
2024-25(CAY)	9	16	23.00	16.74
2023-24(CAYm1)	9	18	27.00	15.00
2022-23(CAYm2)	11	18	30.00	15.17

C4. Faculty Cadre Proportion

- Faculty Cadre Proportion is 1(RF1): 2(RF2): 6(RF3)

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

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

Year	Professors		Associate Professors		Assistant Professors	
	Required RF1	Available AF1	Required RF2	Available AF1	Required RF3	Available AF3
2024-25	2.00	2.00	5.00	5.00	15.00	18.00
2023-24	3.00	2.00	6.00	6.00	18.00	19.00
2022-23	3.00	3.00	6.00	7.00	20.00	19.00
Average	RF1=2.67	AF1=2.33	RF2=5.67	AF2=6.00	RF2=17.67	AF2=18.67

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	Pushkar Suryawanshi	Co-Founder	3Dshikshan Educational Consultancy	Additive Manufacturing (ME316 C and ME8102 ME 8202)	72.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Pushkar Suryawanshi	Co-Founder	3Dshikshan Educational Consultancy	Additive Manufacturing (ME316 C and ME8102 ME 8202)	35.00
2	Ramakant Pandey	Engineer	Modline Thermal Systems Ltd Chennai	Computational Fluid Dynamics	19.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Vinay Raikar	Trainer	Campus Credential	Softskill	52.00

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	5	5	4
2	No. of peer reviewed conference papers published	3	2	0
3	No. of books/book chapters published	7	0	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
J. B. Ashtekar	Nil	Mechanical Dept.	Internet of Things (IoT) Lab and IoT Projects	Mr. Sanjeev Dhody	1 Year	3.00
Dr.S. S. Ingle	Nil	Mechanical Dept.	Heat Transfer and Thermodynamics Lab	Mr. Deepak Vijayvargiya	1 Year	0.50
						Amount received (Rs.):3.50

(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.S. S. Ingle	Nil	Mechanical Dept	Heat Transfer and Thermodynamics Lab	Mr. Deepak Vijayvargiya	1 Year	0.50
						Amount received (Rs.):0.50

(CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr.S. S. Ingle	Nil	Mechanical Dept	Heat Transfer and Thermodynamics Lab	Mr. Deepak Vijayvargiya	1 Year	1.00
						Amount received (Rs.):1.00

Total Amount (Lacs) Received for the Past 3 Years: 5.00

Note*:

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

C8. Consultancy Work

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

(CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr.A. B. Bhagwat	Nil	Mechanical Dept.	Design and development of roller guide equipment used in the adventure sports	HTFE Solutions, Kopargaon, Email-enquiry@htfe.in, Contact-8208616757	1 Year	4.43
Dr.A. B. Bhagwat	Nil	Mechanical Dept.	CFD analysis of thermal storage tank	HTFE Solutions, Kopargaon, Email-enquiry@htfe.inContact-8208616757	1 Year	0.09
						Amount received (Rs.):4.52

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

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

Total amount (Lacs) received for the past 3 years: 4.52

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
V. J. Suryawanshi	Agricultural Mechatool	1 Year	0.60	0.60	Model,Patent
Ms S. M. Gujrathi	Driverless Braking System	1 Year	0.64	0.64	Patents, Actual Working Model
N. S. Surner	Development of Metal 3D Printer for Research Application	1 Year	0.90	0.90	Model
P. A. Bojage	Design and development of engine analysis test rig	1 Year	1.00	0.24	Laboratory test rig
			Amount received (Rs.): 3.14		

(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
V.P.Bhaurkar	Robocon Project Model-2023	1 Year	0.15	0.15	Project Model
			Amount received (Rs.): 0.15		

(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
P. N. Patil	FMAE BAJA Vehicle	1 Year	2.14	2.14	BAJA Vehicle Model
P. N. Patil	FMAE BAJA Vehicle	1 Year	0.81	0.81	BAJA Vehicle Model
			Amount received (Rs.): 2.95		

Total amount (Lacs) received for the past 3 years : 6.24

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	Deming's Metrology Lab	22	1.Portable Surface Tester, Mechanical Comparator, Pneumatic Comparator, Spirit Level 2. Steel Slip	TY-6 batches II	Mr. L. S Thore	Lab Assistant	I T I Bsc Industrial Scienc
2	Curie's Metallurgy Lab	22	. Close Circuit T. V. 2.Ultrasonic Flow Detector 3.Eddy Current Tester 4.Digital Rockwell 5.Hardness Tester	SY- 6 batches I	Mr. L. S Thore	Lab Assistant	I T I Bsc Industrial Scienc
3	Newton's Machine Lab	22	Motorized Gyroscope 2. Vibration. Set-up. 3.Epicyclical gear Trainer 4. Friction clutch test rig. 5. Wheel	FY-8 Batches	Mr. D.N.Tirse	Lab Technician	I T I Bsc Industrial Scienc
4	Kelvin's Thermal Lab- I	22	Ice Plant Test Rig with data logger system(30 kg /day) Multi Gas Analyzer Smoke Meter, Desktop 13 10th Gen	TY-5 Batches F	Mr. L. S. Thore	Lab Assistant	I T I Bsc Industrial Scienc
5	Maxwell Thermal Lab II	22	1.Thermal conductivity of composite walls Apparatus 2. Heat Exchanger Apparatus 3. Force Convection	SY-10 Hrs	Mr. D.N.Tirse	Lab Technician	I T I Bsc Industrial Scienc
6	Pascal's Automation Lab. (Industrial Automation Lab.)	22	1) Triple Gear Oil Pump Test Rig 2) Hydraulic Trainer 3) Pneumatic Trainer	TY-8 Batche	Mr. S. P. Shelar	Technical Assistant	Diploma in Mechanical En
7	Ashton's Industry 4.0 Lab. (IOT Lab.)	22	IoT kit(Arduino,esp32,Raspberry pi, pi-cam, Voltage current meters, various Sensors, Raspberry pi display)	SY-12 Batches	Mr. S. P. Shelar	Technical Assistant	Diploma in Mechanical En
8	Ramajnujans Cad Lab	22	Number of computer =85 Switch cisco 24 Port Internet connection Operating system 10,11 Solid work	Corse -Solidwo	Mr. B. K Ahire	Technical Assistant	Diploma in computer Engg
9	Aryabhata Cad Lab	22	Number of computer =74 Internet connection Switch rack Operating system 10,11 Matlab Auto cad	FY 2 Hours NM	Mr. B. K Ahire	Technical Assistant	Diploma in computer Engg

10	Mechanical Workshop Lab	22	Lathe Machines, Drilling Machine, Bench Grinder, Welding Machines, Fitting Tools, Carpentry Tools	12 Hours (First	Mr.Umesh Kolhe	Workshop Instructor	Diploma in Mechanical En
11	Project Lab	22	Welding Machine 2. Abrasive Cutting Machine 4. Drill Machine 5. Inverter Type Welding Machine	15–20 Hours (I	Mr.R.K Sable	Technical Assistant	Diploma in Mechanical En

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Ramajnujans Cad Lab 117 And Aryabhata Cad Lab 124	I) Safety Instructions/ precautions DOs : 1. Report any accidents, fires, or electrical faults to the lab technician immediately. 2. Ensure you know the location and proper use of the fire extinguisher and first aid kit. 3. Maintain a clean workspace, keeping cables untangled and walkways clear. 4. Use computer systems and equipment only after proper training or instructions. 5. Shut down systems properly and disconnect power in case of emergency. DON'Ts : 1. Don't Insert metal objects like pins or clips into computer parts or sockets. 2. Don't Open the system unit or monitor casing under any circumstances. 3. Don't Step on or pull computer cables and electrical wires. 4. Don't touch or alter any hardware or connections without permission. 5. Don't bring food, drinks, or liquids into the lab to avoid spillage and damage. Safety devices 1. Fire extinguisher. 2. First Aid Kits. 3. Emergency Shutoff Switches.
2	Kelvin's Thermal Lab I	I) Safety Instructions/ precautions Do's: 1. Do check for refrigerant leaks, gas levels, and pressure gauges before starting any test rig. 2. Do wear safety gloves and goggles when handling hot surfaces or refrigerants. 3. Do follow standard operating procedures for thermal and RAC equipment. 4. Do ensure proper ventilation and switch on exhaust fans during practical sessions. 5. Do report abnormal vibrations, overheating, or leakages to the instructor immediately. Don'ts: 1. Don't touch hot surfaces, compressor parts, or steam lines with bare hands. 2. Don't tamper with safety valves, thermostats, or pressure gauges. 3. Don't inhale refrigerant gas or allow open discharge into the lab. 4. Don't spill water near electrical panels or leave lab floor wet/slippery. 5. Don't operate any test rig or refrigeration unit without proper instructor supervision. Safety devices 1. Floor rubber mats 2. Fire extinguisher
3	Curie's Metallurgy Lab	I) Safety Instructions/ precautions 1. Do's: 1. Do take permission from lab staff before handling any machine or testing equipment. 2. Do always wear safety goggles, heat-resistant gloves, and flame-resistant clothing during lab work. 3. Do ensure awareness of the location of fire extinguishers, first aid kits, and emergency exits. 4. Do use proper tools and tongs while handling hot or molten metal samples. 5. Do maintain proper ventilation, especially when using high-heat or chemical testing setups. Don'ts: 1. Don't touch molten metals or heated specimens with bare hands. 2. Don't ignore any unusual sound, spark, or equipment malfunction—report it immediately. 3. Don't keep workspace cluttered—ensure walkways are free of metal scraps and sharp tools. 4. Don't lift heavy samples or equipment without assistance or proper technique. 5. Don't operate machines without proper training or in the absence of the instructor. Safety devices 1. Fire extinguisher
4	Newton's Machine Lab	I) Safety Instructions/ precautions 1. Do's: 1. Do maintain cleanliness and ensure that all tools and machines are returned to their designated places after use. 2. Do perform a visual check on mechanical and electrical components before starting any experiment. 3. Do ensure proper illumination and unobstructed walkways around all test rigs and setups. 4. Do use safety gear like gloves, goggles, and shoes while handling rotating or vibrating equipment. 5. Do report any unusual vibration, noise, or malfunction in test rigs immediately to the lab technician. Don'ts: 1. Don't stand close to moving parts like governors, gyroscopes, or whirling shafts during operation. 2. Don't overload machines or operate them beyond their rated capacity. 3. Don't operate machines without prior instructions or faculty supervision. 4. Don't touch electrical panels or rotating shafts with wet hands. 5. Don't leave mechanical setups running unattended II) Safety devices 1. Fire extinguisher 2. Dry sand 3. First Aid Kits.
5	Heat Maxwell Thermal Lab II	I) Safety Instructions/ precautions Do's: 1. Do maintain cleanliness in the lab and ensure equipment is free from dust and oil before use. 2. Do position all equipment properly, ensuring free and safe movement around machines. 3. Do ensure the lab is well-illuminated while operating any dynamic or moving setups. 4. Do inspect all electrical devices periodically, and use rubber mats where required. 5. Do follow standard operating procedures and report any malfunction or hazard to the lab technician. Don'ts: 1. Don't operate machines like the gyroscope or governor without understanding their mechanism. 2. Don't obstruct pathways with toolboxes, wires, or machine parts. 3. Don't touch rotating or vibrating elements during operation. 4. Don't work on equipment with wet hands or while standing on wet floors. 5. Don't leave machines running unattended or without supervision. II) Safety devices 1. Fire extinguisher 2. Dry sand

6	Pascal’s Automation Lab.	I) Safety Instructions/ precautions Do’s: 1. Do ensure proper earthing of electrical equipment and inspect it regularly. 2. Do clean oil spills immediately using appropriate absorbent cloth—avoid granular materials. 3. Do position the direction control valve to neutral before starting/stopping the power pack. 4. Do wear safety gear: shoes, gloves, goggles, and helmet while handling hydraulic/pneumatic setups. 5. Do switch off the power pack before changing hose pipe connections or tightening fittings. Don’ts: 1. Don’t tamper with or adjust the relief valve on the hydraulic tank. 2. Don’t try to cover high-pressure fluid leaks—immediately switch off the system. 3. Don’t put fingers or objects on or near moving cylinder rods. 4. Don’t operate the pneumatic system above the recommended 8–10 bar pressure. 5. Don’t use tools of incorrect size or operate components without lab assistant supervision. II. Safety devices 1. Fire Extinguisher 2. Rubber Floor Mats
7	Deming’s Metrology Lab	I) Safety Instructions/ precautions Do’s: 1. Do wear safety shoes while handling instruments in the lab. 2. Do handle all measuring instruments and gauges with care to maintain calibration accuracy. 3. Do verify calibration of instruments before use and store them properly after use. 4. Do clean your workspace and return all tools to their designated place after experiments. 5. Do ensure that all electrical instruments are properly grounded and in good condition. Don’ts: 1. Don’t tamper with or misuse precision instruments or gauges. 2. Don’t use damaged, faulty, or uncalibrated equipment for any measurements. 3. Don’t touch electrical equipment without prior permission from the instructor. 4. Don’t leave tools or equipment scattered around the work area. 5. Don’t expose sensitive tools to dust, oil, or forceful impact. II) Safety devices 1. Fire extinguisher
8	Ashton's Industry 4.0 Lab.	I) Safety Instructions/ precautions 1Do’s: 1. Do ensure all IoT devices and electrical equipment are properly earthed and grounded. 2. Do turn off the main power switch after completing experiments. 3. Do wear safety shoes during lab work to avoid electrical shocks. 4. Do keep the workspace organized and free from loose cables to prevent tripping. 5. Do use only certified and approved devices for experiments and network setups. Don’ts: 1. Don’t touch any open or live supply lines during experiments. 2. Don’t operate any equipment without permission or supervision. 3. Don’t overload electrical sockets or use unauthorized extensions. 4. Don’t ignore proper grounding; check it periodically to avoid hazards. 5. Don’t bring unauthorized hardware or IoT devices into the lab. . II) Safety devices 1. Fire extinguisher
9	Workshop	I) Safety Instructions/ precautions Do’s: 1. Do report any medical conditions (e.g., epilepsy, medication) to the workshop staff before beginning work. 2. Do wear proper apron, safety goggles, and enclosed shoes—before entering the workshop. 3. Do secure your workpiece firmly before using tools or machinery. 4. Do notify the workshop supervisor immediately if any equipment is damaged or not working. 5. Do wash your hands after using machines and materials to avoid contamination. 6. Do clean spills immediately and keep your workspace neat and safe. 7. Do report all injuries, even minor cuts, before leaving the workshop. 8. Do tie back long hair and remove jewelry to prevent entanglement. 9. Do know the location of emergency shut-offs, fire extinguishers, and first aid kits. Don’ts: 1. Don’t enter the workshop without wearing approved footwear—no exceptions. 2. Don’t operate any machinery without proper guidance or training. 3. Don’t distract or speak to someone while they are operating equipment. 4. Don’t attempt to fix or use damaged tools or machines. 5. Don’t leave the workspace messy—clean up as you go. 6. Don’t work alone in the workshop under any circumstance. 7. Don’t ignore safety instructions; always behave responsibly. II) Safety devices 1. Fire extinguisher 2. Floor rubber mat 3. Safety goggles
10	Project lab	I) Safety Instructions/ precautions DOs : 1. Inform lab staff of any medical condition that may affect safety. 2. Always wear an apron, safety goggles, and closed-toe safety shoes. 3. Check tools before use and report any damage or malfunction. 4. Ask for help if unsure how to operate any tool or machine. 5. Clamp your workpiece properly before starting any operation. 6. Stay away from others working on machines. 7. Maintain a clean and clutter-free workspace. 8. Wipe up oil, water, or chemical spills immediately. 9. Be familiar with the location of fire extinguishers, first aid box, and emergency shut-off switches. 10. Follow lab rules, instructions, and maintain professional behavior. DON’Ts : 1. Don’t wear rings, watches, or loose jewelry while operating machines. 2. Don’t leave long hair untied while working. 3. Never talk to or disturb someone operating a machine. 4. Don’t operate tools that appear damaged or unsafe. 5. Avoid running, shouting, or playing in the lab. 6. Never consume food or beverages in the lab area. 7. Don’t leave tools or materials lying around after work. Never disregard safety guidelines or staff directions II) Safety devices • Fire Extinguishers • Rubber Mats • Safety Goggles & Gloves • First Aid Kit • Emergency Stop Switches

D3. Project Laboratory/Research Laboratory

A. Availability of Project Laboratories/Research Laboratories

The Mechanical Engineering Department has established a Project Laboratory of 70 Sqm to support students in their academic and extracurricular projects. This lab provides essential resources for prototype development, manufacturing, and testing. It is equipped with the following key machines:

1. Welding Machine
2. Abrasive Cutting Machine
3. Drilling Machine
4. Inverter Type Welding Machine

Students from all academic years to develop practical skills and encourage innovation actively use the Project Laboratory. Final-year B.Tech Mechanical Engineering students use the lab to work on their major projects as part of their academic curriculum. Second and third-year students use the lab for mini projects, which help them build basic design and fabrication skills. The lab also supports students preparing for national-level competitions like SAE BAJA, Go-Kart, Robocon, Smart India Hackathon, TIFAN, and others. These teams use the lab for component manufacturing and project assembly.

Fig.7.19 Project Lab

Fig.7.20 Project Lab

C. **Utilization of Project Laboratories.**

- The lab is used for TIFAN competition projects focusing on mechanized farming solutions.
- It supports BAJA SAE teams for vehicle design, fabrication, and assembly.
- Robocon teams use the lab for robot development and testing.
- Final-year B.Tech students develop working prototypes for their academic projects.
- First to third-year students use the lab for mini projects, enhancing design and fabrication skills.
- The lab is also used for student research initiatives and hands-on experimentation with new technologies.

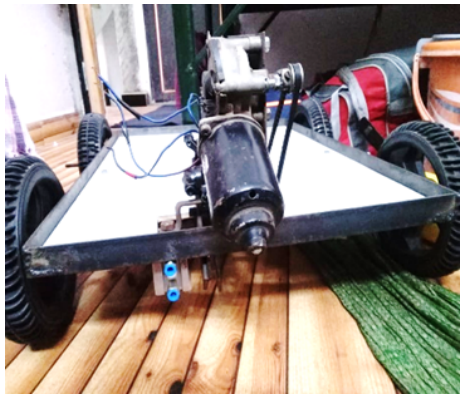
The following is a list of sample projects developed by students in the Project Laboratory:

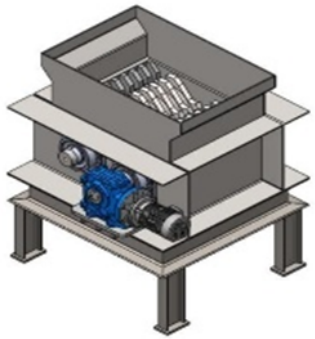
Sr No	Year	QR code
1	**2024-25**	

2	**2023-24**	
3	**2022-23**	
4	**Relevance of POs/PSOs**	
5	**Virtual Labs**	

Academic year 2024-25

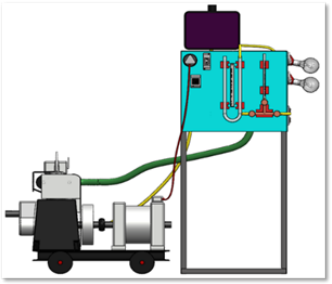
Sr. No.	Name of students	Project Title	Snapshot Project/ photo of project	Project Outcomes	Relevance to POs, PSOs
1	Kumavat Hrushikesh Pankaj Chander Aniket Sonawane Vaishnavi Kankrale Deep Dakle	Agriculture Mechatool		1. Increased Efficiency in Farm Operations 2. Cost-Effective Mechanization 3. Modular Design for Multi-Tasking 4. User-Friendly Interface 5. Improved Crop Yield Support 6. Reduced Physical Labor**Top of FormBottom of Form**	Aligned with PO1, PO3, PO7 and PSO1, PSO2 by applying engineering knowledge to design an innovative, sustainable agricultural solution**.**

2.	Agwan Priti Vijay Aher Pratik Narayan Kakad kalyani Dilip Nagpure Tanushree	Auto-grip Rover		The project demonstrates an AI-enabled robotic rover capable of detecting and cutting fruits through image processing for efficient agricultural automation.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1,PSO2
4	More Keshav Ravindra Phepale Vaibhav Bandu Thorat Shreyash Satish Jadhav Rohit Pandurang	Air Hoses Failure Detection with safety braking system		The project developed a system for early detection of air brake hose failures in commercial vehicles, enhancing overall road safety.Pressure sensors continuously monitored the air pressure within the brake lines, and anomalies such as sudden drops were analyzed using a microcontroller-based logic to detect potential hose ruptures or leaks.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1,PSO2
5	Nagare Amit Sachin Boga Pratima Rushikesh Gunjal Saharsh Umesh	Design and development of RGB (Re Generative Braking) module		The project focuses on the design and development of a cost-effective RGB module for regenerative braking, aiming to convert kinetic energy into electrical energy, thereby enhancing efficiency and reducing the reliance on traditional braking methods	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1,PSO2

6	Sanap Sarthak Vijay Sandeep Bapurao Patil Sangale Kisan Govind Raut Krishna Sanjay	Design And Development of Shredding System		The outcome of this project is the successful design and development of a shredding system capable of efficiently reducing the size of waste materials for easier handling, recycling, or disposal.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2
7	Manurkar Shankar Ananda Pund Onkar Suresh Rachcha Chaitanya Suhas Katore Adesh Sambhaji	Design and development of single cylinder water cooled diesel engine test set-up to identify different performance parameters.		The project enables accurate measurement and analysis of key performance parameters of a single-cylinder water-cooled diesel engine under various operating conditions.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2
8	Gadhave Gourav Vijay Bhojane Sagar D Chavhan Tejas Anil Pagar Aniket Vitthal	Fabrication and testing of solar-opereted Electric weeder for sustainable agriculture		To fabricate and test a solar-operated electric weeder aimed at promoting sustainable agriculture by reducing manual labor, minimizing the use of fossil fuels, and providing an eco-friendly solution for efficient weed removal in small and medium-sized farms	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2

Academic year 2023-24

Sl. No.	Name of students	Project Title	Snapshot Project/ photo of project	Project Outcomes	Relevance to POs, PSOs

1	1.Gawali Shubham Sambhaji 2.Pise Satish Ankush 3.Devkate Nikhil Ashok 4.Gavhane Amol Bhagwan 5.Kalaskar Saurabh Laxman	“Automated Multi Vegetable Transplanter”		The outcome of this project is the development of an automated system for efficiently transplanting multiple vegetables, enhancing agricultural productivity and reducing manual labor.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1,PSO2
2	Ranmale Gaurav Nivrutti Sonawane Chetan Krishna Borse Kamlesh Dinesh Gangodak Abhay Ramesh	Design And Development of Sugarcane Cutter		The project results in a functional prototype of a sugarcane cutter designed to automate and simplify the sugarcane harvesting process.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2
3	Suyash pradip Thorat Aishwarya Santosh Bhaskar Shruti Rajendra Korke Deep Babasaheb Sonawane	Design and Development of Twin booster-A sustainable Health Solution		The outcome of this project is the development of a multifunctional bicycle design that combines cycling with gymnastic workout actions, promoting a full-body workout, improved fitness, and sustainability for longer rides.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2
4	Govind Sumit Sunil Harale Santosh Ramdas Dhokrat Aditya Yogesh Patil Rushikesh Arun	Design, development and analysis of engine analysis test rig		Engine test rig capable of conducting various performance and efficiency tests.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2, PSO3

5	Shinde Ishwari Santosh Mohit Laxman Wadhe Vanve Nishad Radhakisan Gavhane Amol Bhagwan	Design and fabrication of automation system of automated multivagetable transplanter		To design and fabricate an automated system for a multi-vegetable transplanter to improve planting efficiency and reduce manual intervention in agriculture.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2, PSO3
6	Kasar Amol Vilas Kadam Yash Krishna Kurhe Harshita Kaliprasad Pawar Sakshi Narayan	Smart glasses & stick for blind person.		To design and develop a smart glasses and stick system for visually impaired individuals that assists in obstacle detection and navigation using sensors	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1, PSO2

Academic year 2022-23

Sl. No.	Name of students	Project Title	Snapshot Project/ photo of project	Project Outcomes	Relevance to POs, PSOs
1	Ghumare Tushar D Valte Pratik Sadashiv Waman Shubham V Thore Aditya Ajaynath Sarangkar Rohit Vijay Bankar Jayesh N Bhusari Somnath P Dongare Krishna S	Self Propelled Onion Harvester		The project successfully developed a self-propelled onion harvester to efficiently automate the harvesting process, reducing manual labor and time	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1,PSO2
2	Salman Pathan Faiz Khan Prathamesh Khaire Pratiksha Borawake	Numerical simulation of cesaro fins on melting and solidification of PCM		To numerically simulate the effect of Cesaro-shaped fins on the melting and solidification behavior of phase change material (PCM) for enhanced thermal performance.	PO1, PO2, PO4, PO5. PO9, PO10, PO11, PO12, PSO1,PSO2

3	Shivkumar Punjabi Krishna Patil Shrikant Jejurkar Archana Deokar	Electric Bicycle		To design and develop an electric bicycle for eco-friendly, energy-efficient, and cost-effective urban transportation.	PO1, PO2, PO4, PO5.PO7, PO9, PO10, PO11, PO12, PSO1,PSO2
4	Panchmukh Kiran E Aniket Rajendra Cholke Ghogare Prajwal R Jejurkar Rushikesh Sunil	Design Development and analysis of an innovative air conditioning system		To design, develop, and analyze an innovative air conditioning system utilizing thermal energy storage to reduce overall energy consumption.	PO1, PO2, PO4, PO5.PO6, PO7, PO9, PO10, PO11, PO12, PSO1,PSO3
5	Shraddha Erande Balaprasad Navghare Ashwini Dhotre Shelke Dipalee	Performance Analysis and Waste heat recovery from condenser of split AC system		To recover waste heat from its condenser to utilize it for water heating, thereby enhancing overall energy efficiency.	PO1, PO2, PO4, PO5.PO6, PO7, PO9, PO10, PO11, PO12, PSO1,PSO3
6	Gaikwad Swaroop D Durgesh Sanjay Om Sandip shinde Prajit Balasaheb	Vibration analysis of two-wheeler suspension test rig		To perform vibration analysis on a two-wheeler suspension test rig to evaluate its dynamic behavior and assess ride comfort and stability under varying road conditions	PO1, PO2, PO4, PO5.PO7, PO9, PO10, PO11, PO12, PSO1,PSO2

7	Tejas Kadu Helude Gaikwad Pradyumn Makune Prafull Khalkar Mohan	Design and fabrication of solar dryer		To design and fabricate a solar dryer system that utilizes solar energy for the efficient drying of agricultural and food products	PO1, PO2, PO5 .PO7, PO9, PO10, PO11, PO12, PSO1

Relevance to POs/PSOs for Project Lab

PO / PSO	Description	Relevance to Project Work	Level of Mapping
PO1	Engineering Knowledge	Students apply core mechanical, electrical, and software knowledge to design mechanical systems like autonomous rovers, regenerative braking modules, and agricultural tools.	**3**
PO2	Problem Analysis	Projects identify real-world problems and provide practical engineering solutions.	**3**
PO3	Design/Development of Solutions	Each project involves the conceptualization, design, fabrication, and testing of engineering systems with innovative solutions.	**3**
PO4	Conduct Investigations of Complex Problems	Projects involve experiments, data collection, performance testing and analysis to validate concepts.	**2**
PO5	Modern Tool Usage	Students use Autocad , 3D Modelling software , Simulation software , sensors, AI, microcontrollers, and control systems in their projects.	**3**
PO7	Environment and Sustainability	Projects like "RGB module" and "Agri Mechatool" focus on energy recovery and sustainable agricultural practices.	**2**
PO9	Individual and Team Work	All projects are conducted in teams requiring effective collaboration, responsibility, and task distribution.	**3**
PO10	Communication	Students prepare reports, give presentations, and explain project outcomes to peers and faculty.	**2**
PO11	Project Management and Finance	Budget planning, resource procurement, and timeline management are part of the project execution.	**2**
PO12	Life-Long Learning	Students learn to use new tools, adapt to new technologies, and apply interdisciplinary knowledge beyond curriculum.	**2**

Program Specific Outcomes (PSO) Justification

PSO	*Description*	*Relevance to Project Work*	*Level of Mapping*
PSO1	Design and manufacture mechanical components and systems	Direct application in projects involving design and development of mechatronic tools, braking systems, engines, shredders, etc.	**2**

PSO2	Model and analyze machine components using modeling and analysis software's.	Students use sensors, AI tools, image processing, CAD/CAM, and simulation software in their work.	**2**
PSO3	Specify, analyze and determine the performance of thermal systems including IC engines, refrigeration and air conditioning systems, air compressors, hydraulic turbines and pumps.	Direct application in projects involving design and development of Thermal System.	**2**

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)	720	36	16	33	54
2023-24(CAYm1)	720	36	16	40	58
2024-25(CAY)	720	36	16	42	59

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

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

Items	Budgeted in 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Infrastructure Built-Up	0	0	0	0	0	0	0	0
Library	3500000	3937591	3200000	99407	1350000	745600	1450000	560856
Laboratory equipment	12025000	14869861	9065000	3314591	22200000	4233210	17150000	8375948.12

Teaching and non-teaching staff salary	335500000	311000758	329166000	305772300	358250000	275056400	265126000	254086781
Outreach Programs	0	1360441	500000	2441005	700000	325719	1040000	51280
R&D	1200000	1735235	4815000	2740765	1000000	767081	2000000	387205
Training, Placement and Industry linkage	5200000	10550239	3600000	11889536	3000000	7503419	2500000	648796
SDGs	487000	895443	0	163719	6500000	610397	1000000	2718902
Entrepreneurship	1100000	1888869	1500000	4301320	750000	6003059	725000	818365
Others, specify	178917992.3	195876429	186357000	275530913	140997000	283292168.12	140398000	160388587
Total	**537929992.3**	**542114866**	**538203000**	**606253556**	**534747000**	**578537053.12**	**431389000**	**428036720.12**

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

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

Items	**Budgeted in 2024-2025**	**Actual Expenses in 2024-2025 till**	**Budgeted in 2023-2024**	**Actual Expenses in 2023-2024 till**	**Budgeted in 2022-2023**	**Actual Expenses in 2022-2023 till**	**Budgeted in 2021-2022**	**Actual Expenses in 2021-2022 till**
Laboratory equipment	1200000	942014	120000	5995491	1550000	10787520	3820000	823505
Software	500000	429520	250000	343336.99	150000	846320.64	0	9666.58
SDGs	40000	167135.25	100000	34374.64	10000	145416.55	640000	662194.22
Support for faculty development	150000	323883.20	0	512516.41	100000	77596.93	100000	124898.35
R & D	250000	69914.40	200000	575454.39	200000	182743.81	500000	94304.58
Industrial Training, Industry expert, Internship	100000	198550.66	50000	29672.14	100000	105425.14	150000	36535.73
Miscellaneous Expenses*	260000	371780	200000	17465	290000	406352	1045000	1426100
Total	**2500000**	**2502797.51**	**920000**	**7508310.57**	**2400000**	**12551375.07**	**6255000**	**3177204.46**