

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: 11881	Date of Submission: 08-06-2026

PART A- Profile of the Institute

A1.Name of the Institute: Sahyadri College of Engineering & Management	
Year of Establishment : 2007	Location of the Institute: Mangaluru
A2. Institute Address: Sahyadri College of Engineering & Management, Adyar, Managluru -575007	
City:Dakshina Kannada	State:Karnataka
Pin Code:575007	Website:www.sahyadri.edu.in
Email:principal@sahyadri.edu.in	Phone No(with STD Code):0824-2277222
A3. Name and Address of the Affiliating University (if any):	
Name of the University : Visvesvaraya Technological University Bleagavi	City: Belgaum
State : Karnataka	Pin Code: 590018
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: **9**
- No. of PG programs: **2**

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

Sr.No.	Discipline	Level of program	Name of the program	Year of Start	Year of Closed	Name of The Department
1	Engineering & Technology	UG	Artificial Intelligence and Data Science	2021	2022	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
2	Engineering & Technology	UG	Computer Science and Engineering	2007	--	Computer Science and Engineering
3	Engineering & Technology	PG	Computer Science and Engineering	2022	--	Computer Science and Engineering
4	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence & Machine Learning)	2020	--	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
5	Engineering & Technology	UG	Computer Science and Engineering (Cyber Security)	2021	2022	Computer Science and Engineering
6	Engineering & Technology	UG	Computer Science and Engineering (Data Science)	2020	2023	Computer Science and Engineering (Artificial Intelligence and Machine Learning)

7	Engineering & Technology	UG	Electronics & Communication Engineering	2007	--	Electronics and Communication Engineering
8	Engineering & Technology	UG	Information Science & Engineering	2007	--	Information Science and Engineering
9	Engineering & Technology	UG	Mechanical Engineering	2007	--	Mechanical Engineering
10	Engineering & Technology	UG	Robotics and Automation	2021	--	Mechanical Engineering
11	Management	PG	Master of Business Administration	2008	--	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
Computer Science and Engineering	Yes	Computer Science and Engineering	UG
Electronics and Communication Engineering	No	Electronics & Communication Engineering	UG
Information Science and Engineering	Yes	Information Science & Engineering	UG
Mechanical Engineering	No	Mechanical Engineering	UG
Mechanical Engineering	No	Robotics and Automation	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	2007 / --	60	Yes	2022	60	2022	SOUTH-WEST/1-10973518558/2022/EOA	Granted accreditation for 3 years for the period (specify period)	2023	2026	2	4

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
Sanctioned Intake for Last Five Years for the Mechanical Engineering														
Academic Year			Sanctioned Intake											
2025-26			60											
2024-25			60											
2023-24			60											
2022-23			60											
2021-22			90											
2020-21			120											

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 :	LAWRENCE JOSEPH FERNANDES
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	90	120	180
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	59	52	33	28	35	41	133
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	13	16	12	6	20	13
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	0	2	0	6	9
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	62	68	49	42	41	67	155

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]
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2025-26 (CAY)	60	59	3	103.33
2024-25 (CAYm1)	60	52	3	91.67
2023-24 (CAYm2)	60	33	0	55.00

Average [(ER1 + ER2 + ER3) / 3] = 83.33≡ 17.00

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

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

Item	(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).	96.00	132.00	193.00
B=No. of students who graduated from the program in the stipulated course duration	29.00	48.00	117.00
Success Rate (SR)= (B/A) * 100	30.21	36.36	60.62

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 42.40

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)
X=(Mean of 1st year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 1st year/10)	5.96	6.36	6.17
Y=Total no. of successful students	48.00	33.00	26.00
Z=Total no. of students appeared in the examination	55.00	33.00	30.00
API [X*(Y/Z)]	5.20	6.36	5.35

Average API[(AP1+AP2+AP3)/3] : 5.64

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

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

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2nd year/10)	6.30	6.32	6.69
Y=Total no. of successful students	45.00	36.00	37.00
Z=Total no. of students appeared in the examination	49.00	38.00	40.00
API [X * (Y/Z)]	5.79	5.99	6.19

Average API [(AP1 + AP2 + AP3)/3] : 5.99

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)	6.29	7.32	6.39
Y=Total no. of successful students	35.00	37.00	61.00
Z=Total no. of students appeared in the examination	36.00	37.00	61.00

API [X*(Y/Z)]:	6.12	7.32	6.39
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Average API [(AP1 + AP2 + AP3)/3] : 6.61

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	96.00	132.00	193.00
X=No. of students placed	26.00	47.00	122.00
Y=No. of students admitted to higher studies	2.00	5.00	3.00
Z= No. of students taking up entrepreneurship	0.00	0.00	4.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	29.17	39.39	66.84

Average Placement Index = (P_1 + P_2 + P_3)/3: 45.13 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	LAWRENCE JOSEPH FERNANDES	XXXXXXX65D	Ph.D	VISVESVARAYA TECHNOLOGICAL UNIVERSITY (VTU), BELAGAVI	MECHANICAL ENGINEERING SCIENCE	14/07/2012	13.10	Assistant Professor	Associate Professor	01/08/2023	Regular	Yes		Yes
2	RATHISHCHANDRA R GATTI	XXXXXXX67E	Ph.D	CURTIN UNIVERSITY	ENERGY HARVESTING	09/02/2015	11.3	Professor	Professor	09/02/2015	Regular	Yes		No
3	AJITH B S	XXXXXXX81E	Ph.D	VTU BELAGAVI	MECHANICAL ENGINEERING SCIENCE	11/07/2016	9.10	Assistant Professor	Associate Professor	01/08/2024	Regular	Yes		No
4	SHANKARA MURTHY H M	XXXXXXX63B	Ph.D	VTU BELAGAVI	MECHANICAL ENGINEERING SCIENCE	10/06/2019	6.11	Assistant Professor	Associate Professor	11/01/2022	Regular	Yes		No
5	RAMAKRISHNA DEVANANDA P	XXXXXXX64R	Ph.D	NITK SURATHKAL	MATERIALS ENGINEERING	22/07/2013	12.10	Assistant Professor	Associate Professor	01/08/2025	Regular	Yes		No
6	PRASAD CHANDRAN N	XXXXXXX33A	Ph.D	VTU BELAGAVI	MECHANICAL ENGINEERING SCIENCE	27/06/2011	14.10	Assistant Professor	Associate Professor	10/12/2025	Regular	Yes		No

7	SUHAS	XXXXXX12G	Ph.D	KU RAIPUR	MECHANICAL ENGINEERING	01/07/2013	12.10	Assistant Professor	Associate Professor	01/01/2026	Regular	Yes		No
8	VINAY B U	XXXXXX61D	M.Tech	VTU BELAGAVI	MANUFACTURING SCIENCE AND ENGINEERING	20/07/2012	13.10	Assistant Professor	Assistant Professor		Regular	Yes		No
9	VIKAS G	XXXXXX66H	M.Tech	VTU BELAGAVI	PRODUCT DESIGN AND MANUFACTURING	15/07/2013	12.10	Assistant Professor	Assistant Professor		Regular	Yes		No
10	YATHISHA K K	XXXXXX99F	M.Tech	VTU BELAGAVI	MACHINE DESIGN	08/07/2019	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
11	VAISHAK NL	XXXXXX66F	Ph.D	VTU BELAGAVI	MECHANICAL ENGINEERING SCIENCE	15/07/2010	15.10	Assistant Professor	Associate Professor	01/08/2024	Regular	Yes		No
12	MANJUNATH PATEL G C	XXXXXX93D	Ph.D	NITK SURATHKAL	MECHANICAL ENGINEERING	14/07/2025	0.10	Associate Professor	Associate Professor	14/07/2025	Regular	Yes		No
13	KIRAN PRAKSHA A	XXXXXX74R	M.Tech	VTU BELAGAVI	COMPUTER INTEGRATED MANUFACTURING	01/07/2011	14.10	Assistant Professor	Assistant Professor		Regular	Yes		No
14	ABHISHEK K	XXXXXX10K	M.Tech	VTU BELAGAVI	PRODUCT DESIGN AND MANUFACTURING	15/06/2017	8.11	Assistant Professor	Assistant Professor		Regular	Yes		No
15	SUNIL H V	XXXXXX00R	M.Tech	VTU BELAGAVI	MACHINE DESIGN	27/06/2019	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
16	PAVITRA AJAGOL	XXXXXX25P	M.Tech	VTU BELAGAVI	PRODUCT DESIGN AND MANUFACTURING	15/07/2013	12.10	Assistant Professor	Assistant Professor		Regular	Yes		No
17	SHIVAKUMAR K MALLADAD	XXXXXX31B	M.Tech	VTU BELAGAVI	PRODUCTION MANAGEMENT	15/07/2014	11.10	Assistant Professor	Assistant Professor		Regular	Yes		No
18	ADESH PADIVAL B	XXXXXX21F	M.Tech	MANIPAL UNIVERSITY	ENGINEERING MANAGEMENT	01/07/2017	8.10	Assistant Professor	Assistant Professor		Regular	Yes		No
19	GAGAN K SHETTY	XXXXXX46B	M.Tech	VTU BELAGAVI	MANUFACTURING SCIENCE AND ENGINEERING	15/06/2017	8.11	Assistant Professor	Assistant Professor		Regular	Yes		No
20	KESHAVENI	XXXXXX48R	M.Tech	Dr MGR UNIVERSITY	ELECTRONICS AND COMMUNICATION	01/08/2023	1.8	Professor	Professor	01/08/2023	Regular	No	30/04/2025	No
21	B C PRAMOD	XXXXXX90P	M.Tech	NITK SURATHKAL	MECHATRONICS	03/11/2016	8.5	Assistant Professor	Assistant Professor		Regular	No	30/04/2025	No
22	K SUDHEENDRA NAYAK	XXXXXX14K	M.Tech	VTU BELAGAVI	MACHINE DESIGN	07/10/2021	3.6	Assistant Professor	Assistant Professor		Regular	No	30/04/2025	No
23	GAUTHAM NAYAK	XXXXXX53B	MS	UNIVERSITY OF MYSORE	DESIGN	01/08/2019	6.9	Assistant Professor	Assistant Professor		Regular	Yes		No
24	SHRUTHI D POONJA	XXXXXX06L	M.Tech	VTU BELAGAVI	MACHINE DESIGN	17/01/2023	3.4	Assistant Professor	Assistant Professor		Regular	Yes		No

25	SHIV PRASAD	XXXXXX76L	M.E.	IISC BANGALORE	MECHANICAL ENGINEERING	01/08/2025	0.9	Assistant Professor	Assistant Professor		Regular	Yes		No
26	PULKIT GARG	XXXXXX10P	MS	UNIVERSITY OF LILLE	ROBOTICS AND TRANSPORT	30/08/2025	0.8	Assistant Professor	Assistant Professor		Regular	Yes		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 Department2 No. of PG Programs in the Department0

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	96
UG1.D	66	96	132
UG1: Mechanical Engineering	198	228	294
UG2.B	66	64	66
UG2.C	64	66	65
UG2.D	66	65	0
UG2: Robotics and Automation	196	195	131
DS=Total no. of students in all UG and PG programs in the Department	394	423	425
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= 394	S2= 423	S3= 425
DF=Total no. of faculty members in the Department	23	23	23
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= 23	F2= 23	F3= 23
FF=The faculty members in F who have a 100% teaching load in the first-year courses	4	3	3

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
Student Faculty Ratio (SFR)=S/(F-FF)	SFR1= 20.74	SFR2= 21.15	SFR3= 21.25
Average SFR for 3 years	SFR= 21.05		

C3. Faculty Qualification

- Faculty qualification index (FQI) = $2.5 \times [(10X + 4Y)/RF]$ 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 = $2.5 \times [(10X + 4Y) / RF]$
2025-26(CAY)	7	16	19.00	17.63
2024-25(CAYm1)	5	18	21.00	14.52
2023-24(CAYm2)	3	20	21.00	13.10

C4. Faculty Cadre Proportion

- Faculty Cadre Proportion is 1(RF1): 2(RF2): 6(RF3)
- RF1= No. of Professors required = $1/9 \times$ 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 = $2/9 \times$ 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 = $6/9 \times$ 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	6.00	13.00	16.00
2024-25	2.00	1.00	5.00	4.00	14.00	18.00
2023-24	2.00	1.00	5.00	2.00	14.00	20.00
Average	RF1=2.00	AF1=1.00	RF2=4.67	AF2=4.00	RF2=13.67	AF2=18.00

C5. Visiting/Adjunct Faculty/Professor of Practice

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

(CAYm1)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Hemantha Prabhu Basoor	Professor of Practice	Sahyaware Technologies LLP	Mechanics of Materials	26.00
2	Hemantha Prabhu Basoor	Professor of Practice	Sahyaware Technologies LLP	Fluid Mechanics	28.00
3	Kishore D J	Adjunct Faculty	AVT Natural Products	Manufacturing Technology	24.00
4	Kishore D J	Adjunct Faculty	AVT Natural Products	Machine Drawing and GD&T	27.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Hemantha Prabhu Basoor	Professor of Practice	Sahyaware Technologies LLP	Mechanics of Materials	26.00
2	Hemantha Prabhu Basoor	Professor of Practice	Sahyaware Technologies LLP	Fluid Mechanics and Machinery	27.00
3	Kishore D J	Adjunct Faculty	AVT Natural Products	Design for Manufacturing	25.00
4	Kishore D J	Adjunct Faculty	AVT Natural Products	Machine Drawing and GD&T	26.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Hemantha Prabhu Basoor	Professor of Practice	Sahyaware Technologies LLP	Mechanics of Materials	28.00
2	Hemantha Prabhu Basoor	Professor of Practice	Sahyaware Technologies LLP	Mechanics of Materials	26.00
3	Kishore D J	Adjunct Faculty	AVT Natural Products	Advanced Manufacturing Technology	24.00
4	Kishore D J	Adjunct Faculty	AVT Natural Products	Machine Drawing and GD&T	27.00

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	11	13	8
2	No. of peer reviewed conference papers published	1	1	0
3	No. of books/book chapters published	11	11	5

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
Mr. Abhishek K		Department of Mechanical Engineering	Synchromesh Gear Assembly	Karnataka Innovation and Technology Society, Dept. of Electronics, IT and BT, Govt. of Karnataka	4	2.34
Dr. Ajith B S		Department of Mechanical Engineering	Educational Drone Kit – FLYFI Autonomous UAS for Disaster Surveillance	Karnataka Innovation and Technology Society, Dept. of Electronics, IT and BT, Govt. of Karnataka	4	2.40
Dr. Ajith B S		Department of Mechanical Engineering	Performance, Combustion, and Emission Analysis of Biodiesel from Ternary Blends of Safflower Oil, Mutton Tallow, and Waste Coconut Oil in a Diesel Engine	KSCST. Government of Karnataka	1	0.06
Mr. Abhishek K		Department of Mechanical Engineering	Design and Development of an Automatic Pill Dispenser for Elderly Care	KSCST. Government of Karnataka	1	0.07
Dr. Shankara Murthy H M		Department of Mechanical Engineering	Design and Development of a Vertical Axis Wind Turbine for Aerodynamic Enhancements	KSCST. Government of Karnataka	1	0.05
Mr. Suhas		Department of Mechanical Engineering	Design and Development of an Intelligent Mobility Support System for Physically Impaired Individuals Using Robot Operating System (ROS2) and Machine Learning Models	KSCST. Government of Karnataka	1	0.05
Dr. Rathishchandra R Gatti		Department of Mechanical Engineering	Design and Development of an Anti-Tremor Soft Robotic Exoskeleton for Damping Hand Tremors in Elderly and PHT Patients	KSCST. Government of Karnataka	1	0.05
Dr. Ajith B S		Department of Mechanical Engineering	Establishment of AICTE-IDEA Lab (IDEA Idealab ID – IDEA202003645)	AICTE, New Delhi	2	90.00
						Amount received (Rs.):95.02

(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.Ajith B S		Department of Mechanical Engineering	Design and Development of an Unmanned Underwater Search, Rescue, and Analysis Vehicle	KSCST. Government of Karnataka	1	0.07
Dr. Shankara Murthy H M		Department of Mechanical Engineering	Design and Fabrication of a Multipurpose Dehydration Unit Using Waste Biomass	KSCST. Government of Karnataka	1	0.07
Dr. Lawrence Joseph Fernandes		Department of Mechanical Engineering	Design and Fabrication of a Seed Sprayer for Kharif Crops	KSCST. Government of Karnataka	1	0.07
						Amount received (Rs.):0.21

(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
Mr. Goutham Nayak		Department of Mechanical Engineering	Dreamover: Underwater Coral Reef Research Vehicle	Karnataka Innovation and Technology Society, Dept. of Electronics, IT and BT, Govt. of Karnataka	4	2.65
Dr. Rathishchandra R Gatti	Mr.Chandra Singh	Department of Mechanical Engineering	Novel Peristaltic Robot with Electromagnetic Segmentation for Endoscopic Applications	KSCST. Government of Karnataka	1	0.05
Mr. Ajith B S	Bhavana A S	Department of Mechanical Engineering	Design and Development of an Autonomous Ground Vehicle for Warehouse Management	KSCST. Government of Karnataka	1	0.07
Mr. Vikas G	Vinay B U	Department of Mechanical Engineering	Synthesis of Recyclable, Dissolvable, and Environmentally Degradable Plastic for Domestic Applications	KSCST. Government of Karnataka	1	0.08
Mr. Ramakrishna Devananda P		Department of Mechanical Engineering	Design and Development of a Hybrid Air Conditioning System for Sustainable and Efficient Cooling in the Indian Climate	KSCST. Government of Karnataka	1	0.09
Mr. Lawrence Joseph Fernandes		Department of Mechanical Engineering	Knee Mobilizer – A Modified CPM Machine Specially Designed for Post-Patellofemoral (Knee) Surgery	KSCST. Government of Karnataka	1	0.09
Mr. Yathisha K K		Department of Mechanical Engineering	Portable Organic Waste Composter	KSCST. Government of Karnataka	1	0.08
Mr. Gagan Shetty		Department of Mechanical Engineering	Design and Development of an Effective Heat Recovery System Using Lumber as Fuel with Combination of Seebeck Effect	KSCST. Government of Karnataka	1	0.08
Mr. Ajith B S		Department of Mechanical Engineering	Microwave-Assisted Biodiesel Production from Hybrid Oils Based on Chicken Fat Oil–Used Cooking Oil and Their Impact Analysis on a CI Engine	KSCST. Government of Karnataka	1	0.09
Dr. Rathishchandra R Gat		Department of Mechanical Engineering	Development of Automated Welding Techniques in TIG & MIG for Industries	KCTU. Government of Karnataka	3	5.00
						Amount received (Rs.):8.28

Total Amount (Lacs) Received for the Past 3 Years: 103.51

Note*:

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

C8. Consultancy Work

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

(CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Prof. Hemanth Prabhu		Mechanical Engineering	Rural Development Activities	Karnataka Rural Infrastructure Development Limited (KRIDL)	1 Year	14.60
						Amount received (Rs.):14.60

(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
Prof. Hemanth Prabhu		Mechanical Engineering	Rural Development Activities	Karnataka Rural Infrastructure Development Limited (KRIDL)	1 Year	45.03
						Amount received (Rs.):45.03

(CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Prof. Hemanth Prabhu		Mechanical Engineering	Rural Development Activities	Karnataka Rural Infrastructure Development Limited (KRIDL)	1 Year	31.89
						Amount received (Rs.):31.89

Total amount (Lacs) received for the past 3 years: 91.52

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
Dr. Ajith B S	Development of Fabrication Lab	2	20.00	20.00	Publications, Patents, Students Projects
			Amount received (Rs.): 20.00		

(CAYm2)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
			Amount received (Rs.): 0		

(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
			Amount received (Rs.): 0		

Total amount (Lacs) received for the past 3 years : 20.00

PART D: Laboratory Infrastructure in the Department

(Data to be filled in for the Department)

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

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

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	Material Testing Laboratory	20	- Universal Testing Machine – 400KN, with 180° bending test attachment. - Torsion testing machine - 100 N-m. - Impact Testing machine – (300 J). - Brinell Hardness Testing machine (Load range 500-3000kgf). - Rockwell hardness Testing machine. - Vickers hardness Testing machine. - Fatigue Testing machine (200kg-cm) - Pin or disc wear Testing machine. - Muffle furnace. - Metallurgical microscope. - Polishing Machine. - Electronic Balance.	3rd Semester (	Mr. Vijesh	Instructor	D.M.E
2	Mechanical Measurement and Metrology.	20	- Calibration of pressure gauge setup. - Calibration of LVDT setup. - Calibration of Load cell. - Calibration of Thermocouple setup. - Measurement of strain setup. - Lathe tool dynamometer. - Drill tool dynamometer. - Sine bar. - Gear tooth Vernier. - Gear tooth micrometer. - Thread ring gauge. - Plain plug gauge. - Vernier height gauge. - Profile projector. - Mechanical comparator. - Auto collimator. - Surface roughness tester. - Tool maker's microscope - Bevel Protractor	3rd Semester (	Mr. Vishu Kumar	Foreman	D.M.E
3	Machine Shop	20	- Lathe machine. - Milling machine. - Shaping machine. - Pillar drilling machine. - Bench drilling machine. - Bench grinder machine. - Hack saw machine. - Lathe machine with 4 jaw chuck setup	4th Semester (	Mr. Lokesh	Asst. Instructor	ITI

4	Fluid Mechanics and Machinery Lab	20	• Pipe friction apparatus. • Loss of head on pipe fitting apparatus. • Impact of jet on vanes apparatus. • Orifice plate and venturi meter. • Reciprocating air compressor. • Flow nozzle & rotometer. • Notches apparatus. • Kaplan turbine. • Air blower test rig. • Pelton wheel turbine. • Centrifugal pump test rig. • Reciprocating pump test rig. • Francis Turbine test rig.	5th Semester 3	<table><tr><td>Ms. Lavanaya</td><td>Instructor</td><td>DCE</td></tr></table>	Ms. Lavanaya	Instructor	DCE
Ms. Lavanaya	Instructor	DCE						
5	Prototype Fabrication Lab	20	• Tig welding Machine. • Grinding Machine • Cutting Machines • Bosch jigsaw • Metal sheet cutter • Drilling machine and drill bit set • Measuring instruments • Soldering kit • Basic workshop tools	4th Semester (	<table><tr><td>Mr. Ranjith</td><td>Asst. Instructor</td><td>ITI</td></tr></table>	Mr. Ranjith	Asst. Instructor	ITI
Mr. Ranjith	Asst. Instructor	ITI						
6	Energy Conversion Engineering Lab	20	• Abel flash and fire point apparatus. • Pensky martin flash and fire point apparatus. • Bomb calorimeter. • Redwood viscometer. • Saybolt viscometer. • 4 stroke, single cylinder diesel engine test rig. • 4 stroke, single cylinder petrol engine test rig. • 2 stroke, single cylinder petrol engine test rig. • 4 stroke VCR petrol test rig. • Multicylinder petrol engine test rig with hydraulic dynamometer. • Torsion viscometer.	5th Semester (	<table><tr><td>Mr. Viswas M D</td><td>Instructor</td><td>B.E</td></tr></table>	Mr. Viswas M D	Instructor	B.E
Mr. Viswas M D	Instructor	B.E						
7	Heat Transfer Lab	20	• Thermal conductivity of metal rod apparatus. • Overall heat transfers co-efficient of composite wall apparatus. • Effectiveness of metallic fin apparatus. • Heat transfer coefficient in a free convection wall. • Heat transfer Coefficient in a forced convection flow through pipe. • Emissivity of a surface. • Stefan Boltzman constant apparatus. • Vapour compression refrigerator apparatus. • Vapour compression air conditioner apparatus	6th Semester :	<table><tr><td>Mr. Ranjan P</td><td>Instructor</td><td>B.E</td></tr></table>	Mr. Ranjan P	Instructor	B.E
Mr. Ranjan P	Instructor	B.E						
8	Design Lab	20	• Strain gauge rosette apparatus. • Diffused light research Polariscope. • Curved beam apparatus. • Journal bearing equipment. • Vibration equipment (torsional & longitudinal) (damped &undamped) • Balancing of rotating masses. • Whirling of shaft. • Motorized gyroscope. • Governors • (Portor, Provel, Hartnell).	5th Semester :	<table><tr><td>Mr. Suhan U K</td><td>Instructor</td><td>B.E</td></tr></table>	Mr. Suhan U K	Instructor	B.E
Mr. Suhan U K	Instructor	B.E						
9	3D Printing Lab	20	• Creality K1 FDM 3D Printer – 03 Nos • Creality Saturn 2 SLA 3D Printer – 01 Nos • Creality UW -03 Curing Machine – 01 No • Creality Ender FDM DIY 3D printer – 02 Nos • Creality Falcon 10W laser engraving machine – 01 Nos	6th Semester (	<table><tr><td>Ms. Bhavya</td><td>Instructor</td><td>D.E.E.</td></tr></table>	Ms. Bhavya	Instructor	D.E.E.
Ms. Bhavya	Instructor	D.E.E.						

10	Modeling and Analysis Lab	70	- Intel® Core i7 -14th Generation 14700 1TB NVME, 16 GB RAM, 19.5' Monitor (UGS) Femap Nastran software – 25 licenses - SOLIDWORKS – 25 licenses - ANSYS -60 licenses	5th Semester (	<table><tr><td>Mr. Sachin P</td><td>Instructor</td><td>B.E</td></tr></table>	Mr. Sachin P	Instructor	B.E
Mr. Sachin P	Instructor	B.E						

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Material Testing and Metallographic Lab.	- General laboratory safety rules and operating instructions are displayed. - Laboratory-specific safety guidelines are displayed for students and staff. - First aid box, fire extinguisher, and emergency contact details are readily available. - Laboratory apron, safety shoes, gloves, and safety goggles are mandatory wherever applicable. - Equipment is operated only under the supervision of faculty/technical staff. - Testing machines are inspected, and safety guards are checked before operation. - Specimens are securely mounted, and safe operating distances are maintained during testing. - Sharp-edged specimens and metallographic samples are handled using protective gloves. - Laboratory work areas are kept clean, organized, and free from obstructions. - Loose clothing and unsecured long hair are prohibited near rotating equipment. - Equipment malfunctions, spills, and accidents are reported immediately to the laboratory staff. - Electrical equipment is switched off after use, and laboratory waste is disposed of as per prescribed safety guidelines.
2	Machine Shop Lab	- General laboratory safety rules and machine operating instructions are displayed. - Laboratory-specific safety guidelines are displayed for students and staff. - First aid box, fire extinguisher, and emergency contact details are readily available. - Laboratory apron, safety shoes, gloves, and safety goggles are mandatory wherever applicable. - Machines are operated only under the supervision of faculty/technical staff after proper instruction. - Machine guards and emergency stop switches are checked before operation. - Loose clothing and unsecured long hair are prohibited near rotating machinery. - Workpieces and cutting tools are securely clamped before machining operations. - Chips and swarf are removed using brushes or chip hooks; hands are never used directly. - Laboratory work areas are kept clean, organized, and free from oil spills and obstructions. - Equipment malfunctions, accidents, and unsafe conditions are reported immediately to the laboratory staff. - Machines are switched off after use, and tools and materials are returned to their designated storage locations.
3	Mechanical Measurement and Metrology Lab	- General laboratory safety rules and operating instructions are displayed. - Laboratory-specific safety guidelines are displayed for students and staff. - First aid box, fire extinguisher, and emergency contact details are readily available. - Laboratory apron, safety shoes, gloves, and safety goggles is used wherever applicable. - Precision measuring instruments are handled carefully to avoid damage and ensure measurement accuracy. - Measuring instruments are cleaned, calibrated, and returned to their designated storage after use. - Measuring surfaces and instruments are kept free from dust, oil, and moisture to maintain accuracy. - Laboratory benches and walkways are kept clean, organized, and free from obstructions. - Equipment is operated only under the supervision of faculty/technical staff. - Equipment malfunctions or damaged measuring instruments are reported immediately to the laboratory staff. - Electrical equipment is switched off after use, and laboratory waste is disposed of according to prescribed safety guidelines.
4	Fluid Mechanics and Machinery Lab	- General laboratory safety rules and operating instructions are displayed. - Laboratory-specific safety guidelines are displayed for students and staff. - First aid box, fire extinguisher, and emergency contact details are readily available. - Laboratory coats, safety shoes, gloves, and safety goggles are mandatory wherever applicable. - Pumps, turbines, compressors, and other rotating equipment are operated only under the supervision of faculty/technical staff. - All pipe connections, valves, hoses, and fittings are checked for leaks before conducting experiments. - Safety guards are in place for all rotating components, and a safe distance is maintained during operation. - Electrical equipment is operated with dry hands, and wet floors are cleaned immediately to prevent slips and electrical hazards. - Laboratory work areas are kept clean, organized, and free from obstructions. - Equipment malfunctions, water leakage, and unsafe conditions are reported immediately to the laboratory staff. - Equipment is switched off after use, and water supply and electrical power are isolated as per standard shutdown procedures.
5	Energy Conversion Lab	- General laboratory safety rules and operating instructions are displayed. - Laboratory-specific safety guidelines are displayed for students and staff. - First aid box, fire extinguisher, and emergency contact details are readily available. - Laboratory coats, safety shoes, gloves, and safety goggles are mandatory wherever applicable. - Engines and other equipment are operated only under the supervision of faculty/technical staff. - Fuel lines, cooling systems, and exhaust systems are inspected for leaks before conducting experiments. - Adequate ventilation is ensured to prevent the accumulation of exhaust gases and maintain air quality. - Hot surfaces, rotating components, and moving parts are clearly identified, and direct contact is avoided during operation. - Laboratory work areas are kept clean, organized, and free from oil spills and obstructions. - Equipment malfunctions, fuel leaks, and unsafe conditions are reported immediately to the laboratory staff. - Equipment is switched off after use, and fuel, electrical, and cooling systems are isolated as per standard shutdown procedures.

6	Heat Transfer Lab	• General laboratory safety rules and operating instructions are displayed. • Laboratory-specific safety guidelines are displayed for students and staff. • First aid box, fire extinguisher, and emergency contact details are readily available. • Laboratory coats, safety shoes, heat-resistant gloves, and safety goggles are mandatory wherever applicable. • Experimental setups are operated only under the supervision of faculty/technical staff. • Heating elements, boilers, furnaces, and hot surfaces are handled with care to prevent burns. • Steam lines, valves, pressure gauges, and piping connections are inspected before conducting experiments. • Adequate ventilation is ensured during experiments involving heat generation or exhaust gases. • Laboratory work areas are kept clean, organized, and free from obstructions and liquid spills. • Equipment malfunctions, steam leaks, and unsafe conditions are reported immediately to the laboratory staff. • Equipment is switched off and allowed to cool before handling or storage after use.
7	Modeling and Analysis Lab	• General laboratory safety rules and operating instructions are displayed. • Laboratory-specific safety guidelines are displayed for students and staff. • First aid box, fire extinguisher, and emergency contact details are readily available. • Computers, workstations, and peripherals are used only under the supervision of faculty/technical staff. • Food and beverages are prohibited near computer systems and laboratory equipment. • Laboratory workstations and aisles are kept clean, organized, and free from obstructions. • Unauthorized software installation or modification is prohibited. • Equipment malfunctions, electrical faults, and unsafe conditions are reported immediately to the laboratory staff.
8	Design Lab	• General laboratory safety rules and operating instructions are displayed. • Laboratory-specific safety guidelines are displayed for students and staff. • First aid box, fire extinguisher, and emergency contact details are readily available. • Safety shoes, gloves, and safety goggles are used wherever applicable. • Laboratory equipment is operated only under the supervision of faculty/technical staff. • Electrical connections, power outlets, and equipment are periodically inspected to ensure safe operation. • Equipment malfunctions, electrical faults, and unsafe conditions are reported immediately to the laboratory staff.
9	3D Printing Lab	• General laboratory safety rules and operating instructions are displayed. • Operate the 3D printer only after receiving proper training and under the supervision of the laboratory instructor. • Inspect the printer, power connections, and filament before starting the print. • Keep hands away from moving parts during printer operation. • Do not touch the nozzle, hot end, or heated build plate during or immediately after printing. • Ensure the printer is operated in a well-ventilated area, especially when printing with materials that emit fumes. • Wear safety glasses, when removing prints or performing maintenance. • Keep flammable materials away from the printer and never leave the printer unattended for extended periods. • Remove printed parts only after the build plate has cooled or using appropriate tools. • Switch off and unplug the printer before cleaning, maintenance, or replacing components. • Report any equipment malfunction, unusual noise, or overheating to the laboratory instructor immediately.
10	Prototype Fabrication Lab	• General laboratory safety rules and operating instructions are displayed. • Laboratory-specific safety guidelines for fitting and welding operations are displayed. • First aid box, fire extinguishers, sand bucket, and emergency contact details are readily accessible. • Laboratory apron, safety shoes, leather gloves, welding helmet/face shield, and safety goggles are mandatory. • Fitting and welding equipment are operated under the supervision of faculty/technical staff. • Welding machines, and electrical cables are inspected before use to ensure safe operation. • Workpieces are securely clamped before the operations. • Adequate ventilation are ensured during welding to minimize exposure to harmful fumes. • Sparks, hot metal, and welding arcs are kept away from flammable materials and unauthorized personnel. • Sharp-edged materials, cutting tools, and hot workpieces are handled using appropriate protective equipment. • Loose clothing, dangling accessories, and unsecured long hair are prohibited near rotating tools and welding equipment. • The laboratory work area is maintained clean, dry, and free from metal scrap, oil spills, and other obstructions. • Equipment malfunctions, electrical faults, and accidents are reported immediately to the laboratory staff. • Welding machines and electrical equipment are switched off after use. • Metal scrap, welding electrodes, slag, and other waste materials are disposed properly.

D3. Project Laboratory/Research Laboratory

The primary objective of the **Project Laboratory** in the Mechanical Engineering Department is to provide the necessary **space, equipment, and resources** for students to carry out **mini-projects and major projects**. The laboratory also serves as a **meeting and collaboration space** for student teams working on group-based projects.

In addition, students extensively use the project laboratory for **supplementary learning activities**, enabling them to enhance their understanding of classroom concepts and laboratory experiments. The facility is utilized by **third-year students (fifth and sixth semesters)**, **final-year students (seventh and eighth semesters)**, and **research scholars** for academic and research-related project work.

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

Sl. No	Name of the Facility	Name of the Equipment's/ Software	Purpose	Lab In-charge	Qualification
1	Project Lab	• TIG welding Machine. • Grinding Machine • Cutting Machines • Bosch jigsaw • Metal sheet cutter • Drilling machine and drill bit set • Measuring instruments • Soldering kit	Fabrication of UG Projects	Dr. Suhas	Ph.D.
2	CoE – Advanced Energy Lab	• Biodiesel Production Setup • Gas Chromatography • Microwave • Magnetic Stirrer • Wave energy extraction Setup	To provide hands-on training in biodiesel production, fuel characterization, and wave energy harvesting for sustainable energy applications.	Dr. Rathishchandra R Gatti Dr. Aith BS	Ph.D.
2	CoE- Robot Welding	• OTC-DAIHEN 6-axis Articulated Robot Type MIG Welding • OTC-DAIHEN 6-axis Articulated Robot Type TIG Welding	To train and familiarize the students with advanced robotic welding technology.	Mr. Adesh Padival Mr. Abhishek K	M.Tech.

3	CoE – Robotic Lab (Industry Supported Lab - Mphasis)	- NVIDIA Jetson AGX Orin Developer Kit (64 GB) - TurtleBot 4 Lite - Intel RealSense Depth Camera D455 - Elephant Robotics myCobot 280 Pi - Pixhawk 2.4.8 Flight Controller Kit with YDLIDAR G4 (2D) - Raspberry Pi AI HAT+ (26 TOPS) - Embedded Systems Development Kits - Brain–Computer Interface (BCI) & Biosensing Systems	To provide students with hands-on experience in robotics, automation, and AI for smart manufacturing and engineering applications.	Mr. Pulkit Garg	M.Tech.
4	Axtroid Centre of Excellence	- Desktop 3D printer - Hand held 3d scanner - VR headset with PC	To provide students with hands-on experience in additive manufacturing, 3D scanning, and virtual reality for product design, prototyping, reverse engineering, and visualization.	Mr. Vinay B U	M.Tech.

Utilization of Project Lab for 2024-25,2023-24 & 2022-23

Year	Project title	No of students	Utilization
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2024-2025	Design and development of automatic pill dispenser for elderly care	4	• Computer system with CAD software (for design and modelling) • 3D Printer • Drilling Machine • Lathe / Milling Machine • Soldering Station (for electronic assembly) • Measuring Instruments
	Design and development of micro wind turbine	4	• Lathe Machine (for shaft and hub machining) • Milling Machine (for blade slotting and precision work) • Drilling Machine • Welding Machine (for frame fabrication) • 3D Printer (for prototype blades and housing, if available) • Measuring Instruments
	Performance, combustion and emission analysis of biodiesel from ternary blends of safflower oil, mutton tallow and waste coconut oil in a diesel engine	4	• Diesel Engine Test Rig with Eddy Current Dynamometer • Exhaust Gas Analyzer • Biodiesel Processing Setup (Heater with Magnetic Stirrer and Reactor Unit) • Fuel Property Testing Equipment (Viscometer and Flash Point Apparatus) • Fuel Flow Measurement and Load Measuring Instruments
	Design and development of vertical axis wind turbine for aerodynamic enhancements	4	• Lathe Machine (for shaft and rotor components) • Milling Machine (for hub and blade slot machining) • Drilling Machine • Welding Machine (for frame and support structure fabrication) • 3D Printer (for prototype blades and aerodynamic models) • Measuring Instruments (Vernier calliper and micrometre)
	Design and fabrication of smart tree climber and coconut harvester	4	• Welding Machine (for frame and structural fabrication) • Lathe Machine (for shafts, rollers, and mechanical components) • Drilling Machine • Angle Grinder / Cutting Machine (for cutting and finishing metal parts) • Soldering Station (for motor control and electrical connections) • Measuring Instruments (Vernier calliper and steel rule)
	Design and fabrication of an energy efficient solar powered desalination system	3	• Welding Machine (for frame and structural support fabrication) • Drilling Machine • Sheet Metal Cutting and Bending Machine • Solar Panel Testing Kit / Multimeter • Water Quality Testing Instruments (TDS meter and pH meter) • Measuring Instruments (Vernier calliper and steel rule)

Bio oil produced from coconut shell and its performance, combustion and emission evaluation in CI engine	4	• Pyrolysis Reactor Setup (for bio-oil production from coconut shell) • Diesel Engine Test Rig with Eddy Current Dynamometer • Exhaust Gas Analyzer (for emission measurement) • Fuel Property Testing Equipment (Viscometer and Flash/Fire Point Apparatus) • Fuel Flow and Load Measuring Instrument
Design and development of automatic sugarcane bud cutter machine	4	• Lathe Machine (for shafts, rollers, and cutter mounts) • Milling Machine (for cutter slots and precision components) • Drilling Machine • Welding Machine (for frame and structural fabrication) • Power Hacksaw / Cutting Machine (for cutting raw material) • Measuring Instruments (Vernier calliper and steel rule)
Design and fabrication of gantry robot	1	• CNC Milling Machine (for precision guide rails and mounting plates) • Lathe Machine (for shafts and lead screw components) • Drilling Machine • Welding Machine (for gantry frame fabrication) • Soldering Station (for motor drivers and control wiring) • Measuring Instruments (Vernier calliper and micrometre)
Design and development of agricultural robot.	2	• Welding Machine (for chassis and structural frame fabrication) • Lathe Machine (for shafts, wheels, and mechanical components) • Drilling Machine • Milling Machine (for brackets and mounting slots) • Soldering Station (for motor control, sensors, and wiring) • Measuring Instruments (Vernier calliper and steel rule)

2023-2024	Design and fabrication of solar air purifier	4	• Welding Machine (for frame and structural support fabrication) • Drilling Machine • Sheet Metal Cutting and Bending Machine (for casing fabrication) • Soldering Station (for solar panel, fan, and controller connections) • Multimeter / Solar Panel Testing Kit • Measuring Instruments (Vernier calliper and steel rule)
	Design and development of smart preprocessor for wet waste composting	4	• Welding Machine (for frame and composting chamber fabrication) • Lathe Machine (for shafts, blades, and rotating components) • Drilling Machine • Sheet Metal Cutting and Bending Machine • Soldering Station (for sensors, controller, and motor wiring) • Measuring Instruments (Vernier calliper and steel rule)
	Design and development of an integrated air conditioning system incorporating solar water heating desiccant dehumidification and refrigeration	4	• Welding Machine (for frame, ducting, and support structure fabrication) • Drilling Machine • Sheet Metal Cutting and Bending Machine (for ducts and enclosures) • Refrigeration Tool Kit (vacuum pump, manifold gauge set) • Soldering / Brazing Equipment (for copper tubing and electrical connections) • Measuring Instruments (Vernier calliper and steel rule)
	Design and Development of IoT-Enabled Egg Incubator for Effective Hatching of Egg for Small Scale Poultry Formers	4	• Welding Machine (for frame and structural support fabrication) • Drilling Machine • Sheet Metal / Plywood Cutting Tools (for chamber fabrication) • Soldering Station (for sensors, microcontroller, and wiring connections) • Multimeter (for electrical testing and troubleshooting) • Measuring Instruments
	Design And Fabrication of Multipurpose Battery Powered Seed Sowing Machine	4	• Welding Machine (for frame and chassis fabrication) • Lathe Machine (for shafts, rollers, and seed metering components) • Drilling Machine • Milling Machine (for slots and mounting brackets) • Soldering Station (for battery, motor controller, and wiring) • Measuring Instruments

Design & Development of Solar Floating Ball to Harness Energy from Solar Radiation	3	• Welding Machine (for support frame and mounting fabrication) • Drilling Machine • Sheet Metal / Plastic Cutting Tools (for ball casing and mounts) • Soldering Station (for solar panel wiring and controller connections) • Multimeter / Solar Panel Testing Kit • Measuring Instruments
Design and Fabrication of a Horizontal Axis Contra-Rotating Wind Turbine	4	• Lathe Machine (for shafts, hubs, and rotating components) • Milling Machine (for blade mounts and precision slots) • Drilling Machine • Welding Machine (for tower, nacelle frame, and supports) • 3D Printer (for prototype blades and aerodynamic components) • Measuring Instruments (Vernier calliper and micrometre)
Design and fabrication of electric tricycle with regenerative and self-charging	4	• Welding Machine – for chassis and frame fabrication • Lathe Machine – for axle, shaft, and hub machining • Drilling Machine – for hole making and assembly work • Milling Machine – for motor mounts and bracket fabrication • Soldering Station – for motor controller, battery, and wiring connections • Measuring Instruments – for dimensional inspection and accuracy
Design and fabrication of solar sand sieving machine	4	• Welding Machine – for frame and support structure fabrication • Lathe Machine – for shaft and rotating drum components • Drilling Machine – for hole making and assembly work • Milling Machine – for brackets and mounting slots • Soldering Station – for solar panel, motor, and controller connections • Measuring Instruments – for dimensional accuracy and inspection
Design and fabrication of shreddy bin	4	• Welding Machine – for frame and bin structure fabrication • Lathe Machine – for shaft and cutter mounting components • Drilling Machine – for hole making and assembly work • Sheet Metal Cutting and Bending Machine – for bin body fabrication • Soldering Station – for motor wiring and control connections • Measuring Instruments (Vernier calliper and steel rule) – for dimensional accuracy and inspection

	Design and fabrication of seed sprayer for kharif crops	4	• Welding Machine – for frame and support structure fabrication • Lathe Machine – for shaft, nozzle mounts, and mechanical components • Drilling Machine – for hole making and assembly work • Milling Machine – for brackets and mounting slots • Soldering Station – for pump motor and electrical wiring connections • Measuring Instruments (Vernier calliper and steel rule) – for dimensional accuracy and inspection.
	Design and Fabrication of multipurpose dehydration unit using waste biomass	4	• Welding Machine – for frame and combustion chamber fabrication • Sheet Metal Cutting and Bending Machine – for drying chamber and duct fabrication • Drilling Machine – for hole making and assembly work • Lathe Machine – for blower shaft and rotating components • Soldering Station – for blower motor and temperature controller wiring • Measuring Instruments (Vernier calliper and steel rule) – for dimensional accuracy and inspection.
	Design and development of a system for drone-assisted plant leaf disease detection using image processing	4	• 3D Printer – for drone frame modifications and camera mounts • Soldering Station – for wiring of motors, flight controller, and sensors • Drilling Machine – for frame assembly and mounting work • Computer System with Image Processing Software • Multimeter – for electrical testing and troubleshooting • Measuring Instruments (Vernier calliper and steel rule) – for dimensional accuracy and assembly.

2022-2023	Hybrid Air Conditioning System	4	• Welding Machine • Oxy-Acetylene Brazing Set • Bench Drilling Machine • Tube Cutter, Tube Bender, and Flaring Tool Set • Vacuum Pump with Manifold Gauge Set • Digital Multimeter (Clamp Meter)
	Design And Fabrication of Paddy Thresher	4	• Arc Welding Machine • Bench Drilling Machine • Angle Grinder (Cutting and Grinding Machine) • Lathe Machine • Power Hacksaw / Metal Cutting Machine • Measuring Tools (Steel Rule, Vernier Caliper, Measuring Tape)
	Automated Seed Sawing Machine	4	• Arc Welding Machine • Bench Drilling Machine • Angle Grinder (Cutting and Grinding Machine) • Lathe Machine • Soldering Station (Soldering Iron) • Digital Multimeter
	A Study on Areca Nut Husk Fibre Extraction, Composite Panel Preparation and Mech	4	• Fibre Extraction Machine (Decorticator) • Hot Compression Moulding Press (Hydraulic Press) • Mechanical Stirrer/Mixer • Moulds for Composite Panel Preparation • Universal Testing Machine (UTM) • Digital Weighing Balance
	Microwave Assisted Biodiesel Production from Hybrid Oil Based on Chicken Fat Oil	4	• Laboratory Microwave Reactor (Microwave Oven) • Magnetic Stirrer with Hot Plate • Digital Weighing Balance • Separating Funnel • Heating Mantle (or Hot Plate) • Biodiesel Fuel Property Testing Equipment (Viscometer, Bomb Calorimeter, Flash Point Apparatus, and Density Meter)
	Failure And Stress Analysis of Welding Joint	4	• Universal Testing Machine (UTM) • Arc Welding Machine • Metallurgical Microscope • Hardness Testing Machine (Rockwell/Vickers/Brinell) • Angle Grinder and Specimen Cutting Machine • Computer with CAD/FEA Software
	Synthesis Of Recyclable, Dissolvable, And Environmentally Degradable Plastic	3	• Magnetic Stirrer with Hot Plate • Digital Weighing Balance • Heating Oven (Hot Air Oven)

Design And Development of Milk Can Washing Machine	3	• Arc Welding Machine • Bench Drilling Machine • Angle Grinder (Cutting and Grinding Machine) • Lathe Machine • Digital Multimeter
Design And Fabrication of Sand Filtering Machine	4	• Arc Welding Machine • Bench Drilling Machine • Angle Grinder (Cutting and Grinding Machine) • Lathe Machine • Power Hacksaw / Metal Cutting Machine • Measuring Tools (Steel Rule, Vernier Caliper, Measuring Tape)
Robotic Link with Continuous Variable Rigidity	4	• 3D Printer • Lathe Machine • Soldering Station • Digital Multimeter • Universal Testing Machine (UTM) • Computer with CAD/CAE Software
Multifunctional Agricultural Robotic Snake	4	• 3D Printer • Soldering Station • Digital Multimeter • Electric Drill (Bench Drilling Machine) • Computer with CAD/CAE Software
4 Way Hacksaw Machine	4	• Arc Welding Machine • Bench Drilling Machine • Lathe Machine • Angle Grinder (Cutting and Grinding Machine) • Power Hacksaw / Metal Cutting Machine • Measuring Tools (Steel Rule, Vernier Caliper, Measuring Tape)
Automatic Fire Extinguisher	3	• Soldering Station (Soldering Iron) • Bench Drilling Machine • Digital Multimeter • Wire Stripping and Crimping Tools • Electric Screwdriver Set • Computer with Microcontroller Programming Software (Arduino IDE/Embedded IDE)
Smart Multi-Storey Car Parking System	3	• Arc Welding Machine • Bench Drilling Machine • Soldering Station (Soldering Iron) • Digital Multimeter • Angle Grinder (Cutting and Grinding Machine) • Computer with CAD Software

Solarised, Smart and Compact Air Conditioning System	3	• Arc Welding Machine • Drilling Machine • Digital Multimeter (Clamp Meter) • Computer with CAD Software and Microcontroller Programming Software
Electromagnetic Abrasive Surface Finishing	4	• Lathe Machine • Surface Roughness Tester (Profilometer) • Digital Multimeter • Computer with CAD/CAE Software
Optimization Of Machining Parameters in Aluminium Metal Matrix Composites	4	• Lathe Machine • Tool Dynamometer • Surface Roughness Tester (Profilometer) • Tool Wear Measuring Microscope
Emission Detection System for Vehicles	4	• Exhaust Gas Analyzer • Smoke Meter (Opacity Meter) • Digital Multimeter • Soldering Station (Soldering Iron) • Bench Drilling Machine • Computer with Microcontroller Programming Software
Pellete Machine for Paddy Waste	4	• Arc Welding Machine • Lathe Machine • Bench Drilling Machine • Angle Grinder (Cutting and Grinding Machine) • Measuring Tools (Steel Rule, Vernier Caliper, Measuring Tape)
Study On Tensile, Flexural and Vibrational Behaviour of Structural Stee	4	• Universal Testing Machine (UTM) • Universal Flexural Testing Fixture (Three-Point Bending Setup) • Vibration Testing Machine (Shaker with Accelerometer) • Digital Vernier Caliper / Micrometer • Metallurgical Microscope
Design And Fabrication of Fuel Detector in Vehicle Fuel Tank	4	• Soldering Station (Soldering Iron) • Bench Drilling Machine • Digital Multimeter • Wire Stripping and Crimping Tools • Electric Screwdriver Set
Study On Induced Thrust Force & Torque in Drilling Areca Husk-Coir Reinforced	3	• Drill Tool Dynamometer (Thrust Force and Torque Dynamometer) • Surface Roughness Tester (Profilometer) • Tool Makers Microscope • Digital Vernier Caliper / Micrometer

Design And Fabrication of Automated Pneumatic System	4	• Arc Welding Machine • Bench Drilling Machine • Pneumatic Air Compressor • Angle Grinder (Cutting and Grinding Machine) • Soldering Station (Soldering Iron) • Digital Multimeter
Vibration Analyser Using AI for Diagnosis of Two-Wheeler Defects	4	• Digital Oscilloscope • Digital Multimeter • Soldering Station (Soldering Iron) • Computer with AI/ML Software (Python, MATLAB) • Bench Drilling Machine
Design And Development of Low-Cost Automated Smart Grow Room For Mushroom Cultivation	4	• Arc Welding Machine • Bench Drilling Machine • Soldering Station (Soldering Iron)
Design And Development of an Autonomous Ground Vehicle for Warehouse Management	4	• 3D Printer • CNC Milling Machine / Lathe Machine • Soldering Station (Soldering Iron) • Digital Multimeter • Bench Drilling Machine • Computer with CAD Software and Robot Programming Software

Project Sanctioned from KSCST-2024-25

Name of Faculty & Students	Proposal Title	Project Cost (INR in lakhs)
Dr. Ajith B S Mr. Jeevan S Mr. Anirud C P Mr. Ekagrath D Ganiga Mr. Harsha G	Performance, combustion and emission analysis of biodiesel from ternary blends of safflower oil, mutton tallow and waste coconut oil in a diesel engine	5,500.00
Mr. Abhishek K Mr. Ravishankar K S Mr. Gurucharan Nayak K Mr. Ram Rathan Shetty Mr. Mohammed Sifran	Design and development of automatic pill dispenser for elderly care	6,500.00

Dr. Shankara Murthy H M Dr. Ajith B S Mr. Mohammed Shihan Sheikh Mr. Aditya Avinash Mr. Aryan Rao Mr. Rahul B Hegde	Design and development of vertical axis wind turbine for aerodynamic enhancements	5,000.00
Mr. Suhas Mr. Aniruddha Wagle K Mr. Ashish S Talekar Mr. Rohan Balamkar Mr. Kailas Rai D	Design and development of intelligent mobility support system for physically impaired individuals using robot operating system (ros2) and machine learning models	5,000.00
Dr. Rathishchandra R Gatti Ms. Disha N Ms. N Bhavana Nayak Ms. Sharvari Rai Ms. Vasundara	Design and development of anti-tremor soft-robotic exoskeleton for damping hand tremors for elderly and pht patients	5,000.00

Project Sanctioned from KSCST-2023-24

Name of Faculty & Students	Proposal Title	Project Cost (INR in lakhs)
Prof. Ajith B S Mr. Navathej N Mr. Bharath G Mr. Shivaprasad Mr. Yashwin S	Microwave-Assisted Biodiesel Production from Hybrid Oils Based on Chicken Fat Oil-Used Cooking Oil and Their Impact Analysis on CI Engine	9,000.00
Prof. Vikas G Prof. Vinay B U Mr. Nestor Mr. Adriel Mr. Noronha Mr. Pranav S P Mr. Sanath Kumar A	Synthesis of recyclable, dissolvable, and environmentally degradable plastic for domestic applications.	9,000.00

Prof. Ramakrishna Devananda P Mr. Abhijith Bhaskar Acharya Mr. Abhishek Bhaskar Acharya Mr. Chandan S Mr. Krithik B C	Design and development of a hybrid air conditioning system for sustainable and efficient cooling in the Indian climate	9,000.00
Prof. Lawrence Joseph Fernandes Mr. Nikhil GV Aathreya Mr. Ganesh Shenoy Ms. Shravya Neha Mr. Shreyas KM	Knee mobilizer - a modified CPM machine specially designed for post-patellofemoral (knee) surgery	9,000.00
Prof. Yathisha Kk Mr. Hazim Muhammad Mr. Rameez Mohammed Mr. Sinan	Portable organic waste composter	8,000.00
Prof. Gagan Shetty Prof. Ajith B S Mr. Prithvi P Mr. Anjani Kumar Mr. Sanath H N Mr. Varshith K	Design and development of effective heat recovery system using lumber as fuel with combination of seebeck effect	8,000.00

PART E: First Year faculty and financial Resources

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

E1. First Year Student-Faculty Ratio (FYSFR)

Table No. E1.1: FYSFR details.

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members ((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4)); Percentage= ((NS1*0.8) +(NS2*0.2))/RF
2023-24(CAYm2)	780	39	37	12	82
2024-25(CAYm1)	780	39	37	14	83
2025-26(CAY)	780	39	43	14	95

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	1000	919.03	250	275.55	450	90.11	1400.0	1738.11
Library	20	5	55	4.73	25	3.02	23.0	7.42
Laboratory equipment	285	123.95	150	190.71	125	8.60	100.0	92.79
Teaching and non-teaching staff salary	1835	1981	1650	1613.32	1550	1524.68	1500.0	1261.63
Outreach Programs	27	30.69	25	49.54	18	20.14	15.0	13.17
R&D	110	50	100	76.05	100	170.8	100.0	141.12
Training, Placement and Industry linkage	300	325	185	322.63	170	276.12	174.0	156.59
SDGs	35	27.87	25	19.60	15	12.06	12.0	10.0
Entrepreneurship	75	60	75	54.27	60	70	50.0	37.20
Others, specify	1300	1510	896	1003.33	784	158.65	809.00	1113.15
Total	4987	5032.54	3411	3609.73	3297	2334.18	4183.00	4571.18

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	39.11	17.01	22.06	8.45	19.14	6.97	17.43	0.24
Software	2.67	3.05	1.94	2.14	0.96	1.92	1.45	1.98
SDGs	4.8	3.82	3.68	2.88	2.3	1.85	2.09	1.74
Support for faculty development	11.72	9.88	1.11	1.86	5.77	7.67	8.07	5.86
R & D	15.09	6.86	14.71	7.08	15.32	15.21	17.43	4.21
Industrial Training, Industry expert, Internship	33.15	38.92	29.77	52.87	23.02	37.7	24.87	23.73
Miscellaneous Expenses*	186.01	212.39	140.85	153.39	128.3	250.88	148.28	198.54
Total	292.55	291.93	214.12	228.67	194.81	322.20	219.62	236.30