NATIONAL BOARD OF ACCREDITATION

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

Program Name : Production & Industrial Engineering	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 11590	**Date of Submission**: 13-02-2026

PART A- Profile of the Institute

A1.Name of the Institute: Punjab Engineering College (Deemed to be University)	
Year of Establishment : 1921	Location of the Institute: Chandigarh
A2. Institute Address:PEC UNIVERSITY OF TECHNOLOGY	
City:Chandigarh	State:Chandigarh
Pin Code:160012	Website:www.pec.ac.in
Email:REGISTRAR@PEC.AC.IN	Phone No(with STD Code):0172-2753055
A3. Name and Address of the Affiliating University (if any):	
Name of the University :	City: Chandigarh
State : Chandigarh	Pin Code: 160012
A4. Type of the Institution: Deemed University	
A5. Ownership Status: Government Aided	

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

- No. of UG programs: **12**
- No. of PG programs: **13**

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	Aerospace Engineering	1962	--	Aerospace Engineering
2	Engineering & Technology	PG	Aerospace Engineering	2022	--	Aerospace Engineering
3	Engineering & Technology	UG	Civil Engineering	1921	--	Civil Engineering
4	Engineering & Technology	PG	Computer Science & Information Security	2010	--	Cyber Security
5	Engineering & Technology	PG	Computer Science and Engineering	2001	--	Computer Science and Engineering
6	Engineering & Technology	UG	Computer Science and Engineering	1988	--	Computer Science and Engineering
7	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence)	2023	--	Computer Science and Engineering
8	Engineering & Technology	UG	Computer Science and Engineering (Data Science)	2022	--	Computer Science and Engineering

9	Engineering & Technology	PG	Electrical Energy Systems	2022	2025	Electrical Engineering
10	Engineering & Technology	PG	Electrical Engineering	1957	--	Electrical Engineering
11	Engineering & Technology	UG	Electrical Engineering	1947	--	Electrical Engineering
12	Engineering & Technology	UG	Electronics & Communication Engineering	1963	--	Electronics and Communication Engineering
13	Engineering & Technology	UG	Electronics Engineering (VLSI Design and Technology)	2023	--	Electronics and Communication Engineering
14	Engineering & Technology	PG	Environmental Engineering	1989	--	Civil Engineering
15	Engineering & Technology	PG	Industrial Engineering and Management	1995	--	Production and Industrial Engineering
16	Engineering & Technology	PG	Material Science and Engineering	1963	--	Metallurgical and Materials Engineering
17	Engineering & Technology	UG	Mathematics & Computing	2024	--	Mathematics
18	Engineering & Technology	PG	Mechanical Engineering	1957	--	Mechanical Engineering
19	Engineering & Technology	UG	Mechanical Engineering	1921	--	Mechanical Engineering
20	Engineering & Technology	UG	Metallurgical & Materials Engineering	1963	--	Metallurgical and Materials Engineering
21	Engineering & Technology	UG	Production & Industrial Engineering	1967	--	Production and Industrial Engineering
22	Engineering & Technology	PG	Structural Engineering	1964	--	Civil Engineering
23	Engineering & Technology	PG	Transportation Engineering	1957	--	Civil Engineering
24	Engineering & Technology	PG	VLSI Design	2012	--	Electronics and Communication Engineering
25	Engineering & Technology	PG	Water Resource Engineering	1964	2023	Civil Engineering

A7. Programs to be considered for Accreditation vide this Application:

Table No. A7.1: List of programs to be considered for accreditation.

Name of the Department	**Having Allied Departments**	**Name of the Program**	**Program Level**
Civil Engineering	No	Civil Engineering	UG
Mechanical Engineering	No	Mechanical Engineering	UG
Electrical Engineering	No	Electrical Engineering	UG
Production and Industrial Engineering	No	Production & Industrial Engineering	UG
Computer Science and Engineering	No	Computer Science and Engineering	UG

Table No. A7.2: Allied Department(s) to the Department of the program considered for accreditation as above.

Cluster ID. Name of the Department (in table no. A7.1) Name of allied Departments/Cluster (for table no. A7.1)

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	Production & Industrial Engineering	UG	1967 / --	40	No	NA	40	1967	1-2519066781	Granted accreditation for 3 years for the period (specify period)	2022	2025	3	4

List of the Allied Departments/Cluster and Programs:

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

A. Name of the HoD :	Rajendra Madhukar Belokar
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)	40	40	40	40	40	40	40
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	38	32	30	36	36	30	26
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	0	0	0	0	0	0
N3=Separate division if any	0	0	0	0	0	0	0
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	0	0	0	0	0	0	1
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	38	32	30	36	36	30	27

CAY= Current Academic Year. CAYm1= Current Academic Year Minus 1 CAYm2= Current Academic Year Minus 2. LYG= Last Year Graduate. LYGm1= Last Year Graduate Minus 1. LYGm2= Last Year Graduate Minus 2.

B4. Enrolment Ratio in the First Year

Table No. B4.1: Student enrolment ratio in the 1st year.

Year of entry	N (From Table 4.1)	N1 (From Table 4.1)	N4 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2025-26 (CAY)	40	38	0	95.00
2024-25 (CAYm1)	40	32	0	80.00
2023-24 (CAYm2)	40	30	0	75.00

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).	40.00	40.00	40.00
B=No. of students who graduated from the program in the stipulated course duration	30.00	29.00	27.00
Success Rate (SR)= (B/A) * 100	75.00	72.50	67.50

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 71.67

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)	6.36	7.23	6.23
Y=Total no. of successful students	32.00	30.00	36.00
Z=Total no. of students appeared in the examination	32.00	30.00	36.00
API [X*(Y/Z)]	6.36	7.23	6.23

Average API[(AP1+AP2+AP3)/3] : 6.61

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

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

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2rd year/10)	7.44	6.69	6.99
Y=Total no. of successful students	30.00	36.00	32.00
Z=Total no. of students appeared in the examination	30.00	36.00	36.00
API [X * (Y/Z)]	7.44	6.69	6.21

Average API [(AP1 + AP2 + AP3)/3] : 6.78

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)	7.01	7.56	7.60
Y=Total no. of successful students	36.00	30.00	29.00
Z=Total no. of students appeared in the examination	36.00	32.00	29.00
API [X*(Y/Z)]:	7.01	7.09	7.60

Average API [(AP1 + AP2 + AP3)/3] : 7.23

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	40.00	40.00	40.00
X=No. of students placed	19.00	19.00	22.00
Y=No. of students admitted to higher studies	1.00	0.00	2.00
Z= No. of students taking up entrepreneurship	1.00	0.00	0.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	52.50	47.50	60.00

Average Placement Index = (P_1 + P_2 + P_3)/3: 53.33 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	Rahul Omprakash Vaishya	XXXXXXX17Q	Ph.D	PEC Chandigarh	Non-conventional Machining	02/08/2007	18.6	Lecturer	Assistant Professor		Regular	Yes		No
2	Parveen Kalra	XXXXXXX34H	Ph.D	Punjab University	Human Engineering, Industrial Design, CAD/CAM, Robotics	26/12/1990	35.1	Lecturer	Professor	22/02/2006	Regular	Yes		
3	Rajendra Madhukar Belokar	XXXXXXX13C	Ph.D	Punjab University	Manufacturing System Design, Value Engineering, Production and Operations management, TPM, and TQM	15/11/1988	37.3	Lecturer	Professor	29/08/2013	Regular	Yes		Yes

4	Narendra Mohan	XXXXXXX76C	Ph.D	IIT Delhi	Welding Engineering, Casting and Operations Research	04/05/2006	19.9	Assistant Professor	Professor	04/05/2013	Regular	Yes		No
5	Jimmy Karloopia	XXXXXXX87N	Ph.D	IIT Roorkee	Composite Materials; conceptualization and development, Tribology, Machining and process optimizatio	19/12/2022	3.1	Assistant Professor	Assistant Professor		Regular	Yes		No
6	Gurpreet Singh	XXXXXXX19Q	Ph.D	IIT MANDI	Material and manufacturing engineering	21/12/2022	3.1	Assistant Professor	Assistant Professor		Regular	Yes		No
7	Ravinderjit Singh Walia	XXXXXXX94G	Ph.D	IIT Roorkee	Advanced Manufacturing Processes, Metal Matrix Composites, Thermal Coating, Surface Engineering, Opt	28/03/2006	19.10	Lecturer	Professor	28/08/2018	Regular	Yes		No
8	Jasvinder Singh	XXXXXXX64B	Ph.D	IIT DELHI	Additive Manufacturing	26/12/2022	3.1	Assistant Professor	Assistant Professor		Regular	Yes		No
9	Mudimallana Goud	XXXXXXX57G	Ph.D	IIT Roorkee	Non-conventional Machining	05/03/2003	22.11	Assistant Professor	Associate Professor	06/03/2006	Regular	Yes		No
10	Chandrashekhar Jawalkar	XXXXXXX11E	Ph.D	IIT Roorkee	Advanced Manufacturing and Industrial Management	20/02/2004	21.11	Lecturer	Associate Professor	22/07/2016	Regular	Yes		No
11	Suman Kant	XXXXXXX11F	Ph.D	IIT Roorkee	Quality engineering, Soft computing in Manufacturing, Continuous Casting, Industrial Engineering	08/01/2004	22.1	Lecturer	Associate Professor	15/05/2017	Regular	Yes		No
12	Mohit Tyagi	XXXXXXX23F	Ph.D	IIT Roorkee	Industrial Engineering, Supply Chain Management, Quality Management, Operations Research, System Opt	10/05/2023	2.9	Associate Professor	Associate 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 Department1 No. of PG Programs in the Department1

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

Description	**CAY(2025-26)**	**CAYm1 (2024-25)**	**CAYm2 (2023-24)**
UG1.B	40	40	40
UG1.C	40	40	40
UG1.D	40	40	40
UG1: Production & Industrial Engineering	**120**	**120**	**120**
PG1.A	12	12	12
PG1.B	12	12	18
PG1: Industrial Engineering and Management	**24**	**24**	**30**
DS=Total no. of students in all UG and PG programs in the Department	144	144	150
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=** 144	**S2=** 144	**S3=** 150
DF=Total no. of faculty members in the Department	12	12	12
AF= Total no. of faculty members in the allied Departments	0	0	0
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	**F1=** 12	**F2=** 12	**F3=** 12
FF=The faculty members in F who have a 100% teaching load in the first-year courses	2	2	2
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 14.40**	**SFR2= 14.40**	**SFR3= 15.00**
Average SFR for 3 years	**SFR= 14.60**		

C3. Faculty Qualification

- Faculty qualification index (FQI) = 2.5 * [(10X +4Y)/RF] where
- X=No. of faculty members with Ph.D. degree or equivalent as per AICTE/UGC norms.
- Y=No. of faculty members with M. Tech. or ME degree or equivalent as per AICTE/ UGC norms.
- RF=No. of required faculty in the Department including allied Departments to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section C2 of this documents: (RF=S/20).

Table No.C3.1: Faculty qualification.

Year	**X**	**Y**	**RF**	**FQ = 2.5 x [(10X + 4Y) / RF)]**
2025-26(CAY)	12	0	7.00	42.86

2024-25(CAYm1)	12	0	7.00	42.86
2023-24(CAYm2)	12	0	7.00	42.86

C4. Faculty Cadre Proportion

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

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

Year	Professors		Associate Professors		Assistant Professors	
	Required RF1	Available AF1	Required RF2	Available AF1	Required RF3	Available AF3
2025-26	1.00	4.00	1.00	4.00	4.00	4.00
2024-25	1.00	4.00	1.00	4.00	4.00	4.00
2023-24	1.00	4.00	1.00	4.00	5.00	4.00
Average	RF1=1.00	AF1=4.00	RF2=1.00	AF2=4.00	RF2=4.33	AF2=4.00

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)

(CAYm2)

(CAYm3)

C6. Academic Research

Table No. C6.1: Faculty publication details.

S.No.	Item	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
1	No. of peer reviewed journal papers published	17	24	74
2	No. of peer reviewed conference papers published	6	5	11
3	No. of books/book chapters published	11	9	29

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
Prof. Vasundhara Singh	Prof R.S. Walia	Production & Industrial Engineering	Strengthen overall research and development (R&D) infrastructure and ecosystem	DST-PURSE	5 Years	715.00
Prof R.S. Walia	1. Dr. Gurpreet Singh 2. Dr. Jasvinder Singh 3. Dr. Jimmy Karloopia	Production & Industrial Engineering	Nature Inspired Laser Surface Texturing Centre (SR/FST/ET-I/2023/1191)	DST-FIST	5 Years	206.00
						Amount received (Rs.):921.00

(CAYm2)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr. Gurpreet Singh	NA	Production & Industrial Engineering	High entropy lead-free relaxor-ferroelectric ceramics (SRG/2023/001514)	SERB-SRG	2 Years	30.00
						Amount received (Rs.):30.00

(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
Dr. Chandan Sharma	Dr. Jimmy Karloopia	Production & Industrial Engineering	Design and Development of High-Strength Wear Resistant Aluminium Based Hybrid Composites for Air Frame Wings	Core Research Grant-Anusandhan National Research Foundation	3 Years	38.20
						Amount received (Rs.):38.20

Total Amount (Lacs) Received for the Past 3 Years: 989.20

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
						Amount received (Rs.):0

(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. Mohit Tyagi	NA	Production & Industrial Engineering	Skill Development Training	IISER Mohali	5 Months	7.63
Prof. R.S. Walia	Dr. Mohit Tyagi	Production & Industrial Engineering	Automation Internship Training	GGSIPU, Delhi	12 Days	1.09
Prof. R.S. Walia	Dr. Mohit Tyagi Dr. Rahul. O . Vaishya	Production & Industrial Engineering	Indiaskills 2024 competition: CNC Milling and Turning Training	Chandigarh Skill Development	4 Days	1.41
Prof. R.S. Walia	Dr. Mohit Tyagi Dr. Rahul. O . Vaishya	Production & Industrial Engineering	Haryana State Skill 2024 Competition Additive Manufacturing Technology and painting	Haryana Skill Development	16 Days	2.34
						Amount received (Rs.):12.47

(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. R.S. Walia	Dr. Mohit Tyagi	Production & Industrial Engineering	Summer Internship Training	GGSIPU, Delhi	8 Days	0.42
Prof. R.S. Walia	Prof. N.M. Suri	Production & Industrial Engineering	Skill Development Training	IISER Mohali	3 Months	6.36
Prof. R.S. Walia	Prof. N.M. Suri	Production & Industrial Engineering	Skill Development Training	IISER Mohali	5 Months	7.72
						Amount received (Rs.):14.50

Total amount (Lacs) received for the past 3 years: 26.97

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
			Amount received (Rs.): 0		

(CAYm2)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr. Mohit Tyagi		2 years	10.00	6.00	Two software were purchased for Btech, Mtech, PhD Research work 1. SPSS 2. AMoS
Dr. Jasvinder Singh		2 Years	6.50	6.50	4ds smart one FDM printer was purchased
Dr. Jimmy Karloopia		2 years	10.00	10.00	Equipment purchased under initiation grant 1. Stir with squeeze casting machine and developed Al and Mg-based hybrid composite and alloy
Dr. Gurpreet Singh		2 years	8.00	8.00	Equipment purchased under initiation grant for Research work 1. Laser 2. Oscilloscope 3. Muffle Furnace 4. Hydraulic Press 5. Magnetic Stirrer
			Amount received (Rs.): 34.50		

(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 : 34.50

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	Welding and Casting Laboratory	25	DC TIG cum SMAW Welding (TORNADO 200HF) M I G Welding (300Amp.-ESAB AB make) Spot cum	06	Sh Ramneek Singh	Workshop Instructor	ITI
2	Foundry Lab	25	Universal Sand Strength Tester - Hydraulic (Kelson Make) a) Tension Strength Test Attachment - (Kelson	06	Sh Ramneek Singh	Workshop Instructor	ITI
3	Metrology Lab	25	Universal Measuring Microscope (CARL ZEISS) Autocollimator 6D (Nikon) Digimatic Microprocessor	06	Sh Rajesh Gupta	Draftsman	ITI
4	Machine Tool and Metal Cutting Laboratory	25	Universal Milling Machine (Type-Mu2 Horizontal Plan Milling Machine (Type FH-1) Universal Milling Machine	06	Sh Gurnam Singh	Technician	ITI

5	CAD/CA M Laborato ry	25	TRIAC VMC & Mitsubishi Robotic Arm ATLAS Robotic System Minitab 15 AE Single User Statistical Software Festo Pneumatic & Hydraulic Simulation software	06	Sh Rajesh Gupta	Draftsman	ITI
6	Modern Manufacturing Laborato ry	25	C.N.C Mini Mill – (Haas Make) Abrasive Flow Machine Setup Electric Discharge Machining – (Sparkonix make) Vacuum Casting Machine With Assembly	06	Sh. Rampal	Senior Lab Attendent	ITI

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Welding & Casting Lab.	Fire extinguishers installed. ALWAYS wear a proper face shield. ALWAYS wear close-toed shoes. ALWAYS wear an apron. ALWAYS wear welding gloves. ALWAYS wear ear protection to prevent sparks from entering your ear canal. Cylinders must be securely capped
2	Foundry Lab	Have A Dry Pile Of Sand & Shovel Ready To Put Out Fires Or To Control Metal Spills. Wear Protective Equipment's While Working. Use Safety Glasses. Even Minor Mishaps Can Cause Blindness. Never Use Damaged Or Dropped Crucible
3	Modern Manufacturing Laboratory	Use of aprons and safety shoes while performing the lab experiments. Fire extinguishers installed.
4	Machine tool and metal cutting laboratory	Fire extinguishers installed. Safety glasses must be worn at all times in work areas. Sturdy footwear must be worn at all times in work areas. Gloves must not be worn when using Lathe machine. Close fitting / protective clothing must be worn.
5	Metrology Lab	Fire extinguishers installed.
6	CAD/CAM Laboratory	Fire extinguishers installed. Remove your shoes in designated area. Maintain the Temperature at cooler side; Lab Equipment can over heat Do not open the system unit casing or monitor casing when the power is turned on. Do not insert metal objects such as chips, pins and needles into the computer casings. They may cause fire. Try not to touch any of the circuit boards and power sockets when a device is connected to them and switched on

D3. Project Laboratory/Research Laboratory

The following labs are utilized for the project works assigned as per the curriculum:-

Sr. No.	Name of the Laboratory	Utilization
1	Welding & foundry Lab.	• Practical experiments are conducted for UG students. • For student projects in UG, PG and set-up development/fabrication for research by Ph.D research scholars. • Consultancy purposes.
2	Modern Manufacturing Laboratory	
3	Machine tool and metal cutting laboratory	
4	Metrology Lab	
5	CAD/CAM Laboratory	

The B.Tech students use these laboratories to accomplish their Minor and Major Project Work.

Few samples are illustrated here:

This project focuses on the design, development, and experimental validation of a low-cost Arduino-based DIY 3D scanner. The purpose of the scanner is to meet the growing demand for 3D scanning in manufacturing, product development, and reverse engineering. Most commercial 3D scanners operate using technologies such as time-of-flight, triangulation, and structured light, which make them expensive and less accessible for educational and small-scale applications.

The proposed system develops an affordable 3D scanner based on the triangulation principle, with an approximate total cost of ₹11,000. The Arduino microcontroller acts as the central control unit and is integrated with other components.

Aim

The aim of this project was to design and develop a low-cost Arduino-based 3D scanner capable of capturing object geometry and generating digital 3D models for educational and prototyping purposes.

Scope

Development of an affordable and simple 3D scanning system.

Integration of mechanical, electronic, and software components for automated scanning.

Generation of point-cloud data and conversion into 3D models using processing software.

Application:
(1) Educational laboratories,
(2)Small industries
(3) Reverse Engineering, (4) Research projects.
(5) Product Design and Prototyping – Converting physical objects into digital models for modification or 3D printing.
(6)Manufacturing & Inspection purpose

Project Name - Development of a Rocker Bogie Robot for Rough terrain surveillance for Agriculture
Abstract - This project introduces a low-cost agricultural robot built using a NASA-inspired Rocker-Bogie suspension and affordable PVC materials. Designed for small-scale farmers, the six-wheeled rover navigates rough terrain without damaging the soil, offering a cheap alternative to heavy, expensive machinery. By combining Industry 4.0 technology with frugal manufacturing, it provides a practical solution for labor shortages

and precision farming in developing regions.

This project explores the development of a solar-powered grass cutter, aiming to offer an environmentally friendly and cost-efficient alternative to traditional fuel-based lawn mowers. Conventional grass cutters contribute significantly to noise and air pollution, require routine maintenance, and are less user-friendly. In contrast, the solar grass cutter harnesses solar energy, converting it to electrical energy to power motors that operate cutting blades.

The model integrates key components like polycrystalline solar panels, DC motors, rechargeable batteries, relays, a microcontroller (ATmega32A), and obstacle detection sensors. Designed using CAD software like SolidWorks and Fusion 360, the prototype emphasizes functionality and sustainability.

The report details component specifications, system design, methodology, and experimental analysis based on real-time environmental conditions such as temperature, voltage, and sunlight intensity. Through testing and comparative studies, the prototype demonstrates effective performance under various operating conditions, validating its potential as a sustainable solution for modern lawn maintenance needs.

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.

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	350	301.67	439	388.73	660.00	535.18	386.64	360.33
Library	80	38.81	206.00	183.37	250.00	133.09	280	278.52
Laboratory equipment	2132.16	341.91	656.90	136.54	930.00	108.54	519	327.94
Teaching and non-teaching staff salary	6520	5436.32	6290.00	6243.95	6860.00	5836.31	5798.31	5695.81
Outreach Programs	0	0	0	00	0	0	0	0
R&D	100	41.41	80.00	56.37	300	0	1.00	0.48
Training, Placement and Industry linkage	35	29.56	30	13.22	25	26.82	32	20.85
SDGs	0	0	0	0	0	0	0	0
Entrepreneurship	8	6.71	5	3.59	6	3.95	25	4.71
Others, specify	6098	4337.49	6043.96	5260.24	5211.08	4558.45	5413.62	5001.57
Total	**15323.16**	**10533.88**	**13750.86**	**12286.01**	**14242.08**	**11202.34**	**12455.57**	**11690.21**

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	50.00	45.57	80.00	33.62	43.36	0.30	63.00	54.06
Software	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SDGs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Support for faculty development	2.00	1.10	22.00	19.10	12.00	0.55	0.00	0.00
R & D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Training, Industry expert, Internship	2.84	0.35	3.23	2.98	2.00	1.36	1.68	1.45
Miscellaneous Expenses*	10.00	6.13	6.00	5.57	2.00	1.05	10.00	3.20
Total	**64.84**	**53.15**	**111.23**	**61.27**	**59.36**	**3.26**	**74.68**	**58.71**