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: 11730	**Date of Submission**: 16-04-2026

PART A- Profile of the Institute

A1.Name of the Institute: BIRLA INSTITUTE OF TECHNOLOGY	
Year of Establishment : 1955	Location of the Institute: RANCHI JHARKHAND
A2. Institute Address:BIRLA INSTITUTE OF TECHNOLOGY, MESRA	
City:Ranchi	State:Jharkhand
Pin Code:835215	Website:www.bitmesra.ac.in
Email:vc@bitmesra.ac.in	Phone No(with STD Code):0651-2276016
A3. Name and Address of the Affiliating University (if any):	
Name of the University : NIL	City: Ranchi
State : Jharkhand	Pin Code: 835215
A4. Type of the Institution: Deemed University	
A5. Ownership Status: Self financing	

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

- No. of UG programs: **14**
- No. of PG programs: **20**

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	Architecture	UG	Architecture	1993	--	Architecture
2	Computer Application	UG	Artificial Intelligence and Machine Learning	2022	--	Computer Science and Engineering
3	Computer Application	Diploma	Computer Engineering	2002	--	Computer Science and Engineering
4	Computer Application	UG	Computer Science and Engineering	1983	--	Computer Science and Engineering
5	Computer Application	PG	Computer Science and Engineering	1999	--	Computer Science and Engineering
6	Computer Application	PG	Computer Science and Engineering (Artificial Intelligence and Machine Learning)	2021	--	Computer Science and Engineering
7	Computer Application	PG	Master in Computer Applications	1984	--	Computer Science and Engineering

8	Engineering & Technology	PG	Aerospace Engineering	1968	--	Space Engineering
9	Engineering & Technology	Diploma	Automobile Engineering	2001	--	Automobile Engineering
10	Engineering & Technology	PG	Biotechnology	2010	--	Biotechnology
11	Engineering & Technology	UG	Biotechnology	2002	--	Biotechnology
12	Engineering & Technology	UG	Chemical Engineering	2011	--	Chemical Engineering
13	Engineering & Technology	UG	Civil Engineering	1957	--	Civil Engineering
14	Engineering & Technology	Diploma	Civil Engineering	2025	--	Civil and Environmental Engineering
15	Engineering & Technology	PG	Civil Engineering	2024	--	Civil Engineering
16	Engineering & Technology	PG	Electric Vehicle Technology	2022	--	Electrical and Electronics Engineering
17	Engineering & Technology	UG	Electrical & Electronics Engineering	1955	--	Electrical and Electronics Engineering
18	Engineering & Technology	Diploma	Electrical and Electronics Engineering	2010	--	Electrical and Electronics Engineering
19	Engineering & Technology	PG	Electrical Engineering	2022	--	Electrical and Electronics Engineering
20	Engineering & Technology	Diploma	Electronics & Communication Engineering	2001	--	Electronics and Communication Engineering
21	Engineering & Technology	UG	Electronics & Communication Engineering	1960	--	Electronics and Communication Engineering
22	Engineering & Technology	PG	Electronics & Communication Engineering	2022	--	Electronics and Communication Engineering
23	Engineering & Technology	UG	Food Engineering and Technology	2023	--	Chemical Engineering
24	Engineering & Technology	UG	Information Technology	1999	2022	Computer Science and Engineering
25	Engineering & Technology	UG	Mechanical Engineering	1955	--	Mechanical Engineering
26	Engineering & Technology	Diploma	Mechanical Engineering	2010	--	Mechanical Engineering
27	Engineering & Technology	PG	Mechanical Engineering	1964	--	Mechanical Engineering
28	Engineering & Technology	UG	Production & Industrial Engineering	1964	--	Production and Industrial Engineering
29	Engineering & Technology	PG	Production and Industrial Engineering	1992	--	Production and Industrial Engineering
30	Engineering & Technology	PG	Remote Sensing	1997	--	Remote Sensing
31	Engineering & Technology	PG	Urban Planning	2007	--	Urban Planning
32	Hotel Management	UG	Hotel Management & Catering Technology	2003	--	Hotel Management
33	Management	PG	Integrated BBA + MBA	2024	--	Management
34	Management	PG	Master of Business Administration	1980	--	Management

35	Pharmacy	PG	Pharmaceutical Chemistry	1983	--	Pharmacy
36	Pharmacy	PG	Pharmaceutical Quality Assurance	2011	--	Pharmacy
37	Pharmacy	PG	Pharmaceutics	1983	--	Pharmacy
38	Pharmacy	PG	Pharmacognosy	1998	--	Pharmacy
39	Pharmacy	PG	Pharmacology	1998	--	Pharmacy
40	Pharmacy	UG	Pharmacy	1972	--	Pharmacy

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

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

Name of the Department	Having Allied Departments	Name of the Program	Program Level
Mechanical Engineering	No	Mechanical Engineering	UG
Electrical and Electronics Engineering	No	Electrical & Electronics Engineering	UG
Electronics and Communication Engineering	No	Electronics & Communication Engineering	UG
Production and Industrial Engineering	No	Production & Industrial 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	1964 / --	30	Yes	2014	60	2014	F.No. Eastern/1-44640378024/2025/EOA, Date of Approval: 06-Apr-2025	Granted accreditation for 3 years for the period (specify period)	2023	2026	4	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 :	Laxmi Narayan Pattanaik
B. Nature of appointment:	Regular
C. Qualification:	Ph.D

B3. Program Details

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

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2025-26 (CAY)	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)	2021-22 (CAYm4)	2020-21 (CAYm5)	2019-20 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	60	60	60	60	60	60	60
N1=Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	57	63	52	55	43	50	45
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	1	0	0	0	0	0	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	58	63	52	55	43	50	45

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

B4. Enrolment Ratio in the First Year

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

Year of entry	N (From Table 4.1)	N1 (From Table 4.1)	N4 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2025-26 (CAY)	60	57	1	96.67
2024-25 (CAYm1)	60	63	0	105.00
2023-24 (CAYm2)	60	52	0	86.67

Average [(ER1 + ER2 + ER3) / 3] = 96.11≡ 20.00

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).	60.00	60.00	60.00
B=No. of students who graduated from the program in the stipulated course duration	35.00	44.00	34.00
Success Rate (SR)= (B/A) * 100	58.33	73.33	56.67

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 62.78

B6. Academic Performance of the First-Year Students of the Program

Table No.B6.1: Academic Performance of the First-Year Students of the Program.

Academic Performance	CAYm1(2024-25)	CAYm2(2023-24)	CAYm3 (2022-23)
Mean of CGPA or mean percentage of all successful students(X)	6.90	7.23	5.61

Y=Total no. of successful students	59.00	44.00	54.00
Z=Total no. of students appeared in the examination	63.00	52.00	55.00
API [X*(Y/Z)]	6.46	6.12	5.51

Average API[(AP1+AP2+AP3)/3] : 6.03

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)	7.47	6.57	6.45
Y=Total no. of successful students	44.00	54.00	36.00
Z=Total no. of students appeared in the examination	44.00	54.00	42.00
API [X * (Y/Z)]	7.47	6.57	5.53

Average API [(AP1 + AP2 + AP3)/3] : 6.52

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)	7.19	7.11	7.36
Y=Total no. of successful students	49.00	36.00	45.00
Z=Total no. of students appeared in the examination	54.00	36.00	45.00
API [X*(Y/Z)]:	6.52	7.11	7.36

Average API [(AP1 + AP2 + AP3)/3] : 7.00

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	60.00	60.00	60.00
X=No. of students placed	27.00	30.00	25.00
Y=No. of students admitted to higher studies	3.00	2.00	0.00
Z= No. of students taking up entrepreneurship	0.00	0.00	0.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	50.00	53.33	41.67

Average Placement Index = (P_1 + P_2 + P_3)/3: 48.33 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	Indranil Manna	XXXXXXX34K	Ph.D	IIT KGP	Materials Engineering	03/08/2020	5.8	Professor	Professor	03/08/2020	Regular	Yes		No
2	Vinay Sharma	XXXXXXX30B	Ph.D	BIT Mesra	Advance Manufacturing, Quality Engineering	26/07/2021	4.8	Professor	Professor	26/07/2021	Regular	Yes		No
3	Sanjay Kumar Jha	XXXXXXX52E	Ph.D	BIT Mesra	Manufacturing technology, Industrial Engineering	04/03/1997	29.1	Assistant Professor	Professor	02/09/2024	Regular	Yes		No
4	Ritesh Kumar Singh	XXXXXXX18A	Ph.D	BIT Mesra	Industrial Engineering	01/02/2003	23.2	Assistant Professor	Associate Professor	01/06/2010	Regular	Yes		No
5	Laxmi Narayan Pattanaik	XXXXXXX97A	Ph.D	IIT Roorkee	Industrial Engineering	24/10/2005	20.5	Assistant Professor	Associate Professor	01/06/2010	Regular	Yes		Yes
6	Joyjeet Ghose	XXXXXXX09J	Ph.D	BIT Mesra	Manufacturing Technology	02/01/2006	20.3	Assistant Professor	Associate Professor	02/07/2012	Regular	Yes		No
7	Bappa Acherjee	XXXXXXX51N	Ph.D	Jadavpur University	Manufacturing Technology	16/06/2017	8.9	Assistant Professor	Associate Professor	02/09/2024	Regular	Yes		No
8	Manish Oraon	XXXXXXX82D	Ph.D	BIT Mesra	Manufacturing Technology	26/08/2022	2	Assistant Professor	Assistant Professor		Regular	No	02/09/2024	No
9	Prashant Prakash	XXXXXXX68L	Ph.D	BIT Mesra	Manufacturing Technology	16/08/2022	3.7	Assistant Professor	Assistant Professor		Regular	Yes		No
10	Binay Kumar	XXXXXXX37J	Ph.D	BIT Mesra	Product Design and Development, Manufacturing Technology,	23/06/2008	17.9	Assistant Professor	Assistant Professor		Regular	Yes		No
11	Somak Datta	XXXXXXX70P	Ph.D	IIT KGP	Manufacturing Technology, Industrial Engineering	19/11/2011	14.4	Assistant Professor	Assistant Professor		Regular	Yes		No
12	Gayatri Paul	XXXXXXX84F	Ph.D	IIT KGP	Nanolubricants, Tribology, Materials Characterization	17/08/2021	4.7	Assistant Professor	Assistant Professor		Regular	Yes		No
13	Abhishek Kumar Singh	XXXXXXX02N	Ph.D	BIT Mesra	Automated Manufacturing Systems	22/06/2020	5.9	Assistant Professor	Assistant Professor		Regular	Yes		No

14	Sanjiv Kumar Tiwari	XXXXXXX71D	Ph.D	BIT Mesra	Quality Engineering and Management	05/01/2021	5.3	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Randhir Kumar	XXXXXXX16P	Ph.D	NIFFT Hatia	Foundry and Forge Technology	22/06/2020	5.9	Assistant Professor	Assistant Professor		Regular	Yes		No
16	Thakur Abhinav Amar	XXXXXXX31M	Ph.D	NIT Patna	Manufacturing Technology	08/08/2022	3.8	Assistant Professor	Assistant Professor		Regular	Yes		No
17	Suman Samanta	XXXXXXX64L	Ph.D	IIT Kanpur	Industrial Engineering	14/09/2021	4.6	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 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	60	60	60
UG1.C	60	60	60
UG1.D	60	60	60
UG1: Production & Industrial Engineering	**180**	**180**	**180**
PG1.A	12	12	12
PG1.B	12	12	12
PG1: Production and Industrial Engineering	**24**	**24**	**24**
DS=Total no. of students in all UG and PG programs in the Department	204	204	204
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=** 204	**S2=** 204	**S3=** 204

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
DF=Total no. of faculty members in the Department	16	16	17
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=** 16	**F2=** 16	**F3=** 17
FF=The faculty members in F who have a 100% teaching load in the first-year courses	2	3	3
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 14.57**	**SFR2= 15.69**	**SFR3= 14.57**
Average SFR for 3 years	**SFR= 14.94**		

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)	16	0	10.00	40.00
2024-25(CAYm1)	15	1	10.00	38.50
2023-24(CAYm2)	16	1	10.00	41.00

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	3.00	2.00	4.00	6.00	9.00
2024-25	1.00	2.00	2.00	4.00	6.00	10.00
2023-24	1.00	2.00	2.00	4.00	6.00	11.00
Average	RF1=1.00	AF1=2.33	RF2=2.00	AF2=4.00	RF2=6.00	AF2=10.00

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)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. Kripa Shanker	Senior Adjunct Professor	Department of Industrial & Management, IIT Kanpur	Operation Research	7.00

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	35	35	25
2	No. of peer reviewed conference papers published	2	1	5
3	No. of books/book chapters published	3	8	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
Prof. I. Manna	Dr. G. Paul, Dr. B. Acherjee, Dr. S. Datta	Department of Production and Industrial Engineering	Laser Additive Manufacturing and Refurbishment of High Temperature Resistant Structural Components	DST-TTI	3 Years	435.00
Dr. Prashant Prakash	-	Department of Production and Industrial Engineering	Robotic Bobbin tool Friction Stir Welding (B-FSW) System Development for Efficient On-Site Structural Welding	Jharkhand council on Science, Technology and Innovation	3 Years	6.00
						Amount received (Rs.):441.00

(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. Bappa Acherjee	Dr. J. Ghose	Department of Production and Industrial Engineering	Laser-based manufacturing of multi-layer polymer-metal sandwich composite and performance assessment for lightweight material	ANRF	3 Years	54.39
Prof. I. Manna	Dr. S. Datta, Dr. B. Acherjee	Department of Production and Industrial Engineering	Development of Hard and Wear-resistant Coating for Hydraulic Cylinders by Laser Surface Cladding as a substitute for Hard Chrome Plating	ANRF	3 Years	44.67
						Amount received (Rs.):99.06

(CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr. J. Ghose	Dr. Bappa Acherjee	Department of Production and Industrial Engineering	Manufacturing and characterization of aluminum alloy hybrid nanocomposite produced by stir-ultrasonic-squeeze casting method for automotive application	ANRF	3 Years	40.00
Dr. G. Paul	-	Department of Production and Industrial Engineering	Assessment of Tribological Properties of Graphene based Nano-lubricants Developed by Ball Milling for Automotive Applications	ANRF	2 Years	32.92
						Amount received (Rs.):72.92

Total Amount (Lacs) Received for the Past 3 Years: 612.98

Note*:

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

C8. Consultancy Work

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

(CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr. Binay Kumar	Calculation of drag and skin friction on Carbon Fiber (CF) tube	Department of Production and Industrial Engineering	Calculation of drag and skin friction on Carbon Fiber (CF) tube	Specialty Products and Services (India) LLP	03 months	0.05
						Amount received (Rs.):0.05

(CAYm2)

(CAYm3)

Total amount (Lacs) received for the past 3 years: 0.05

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
			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
Dr. Gayatri Paul	Synthesis, Characterization and Applications of Nano lubricants for Minimum Quantity Lubrication	5 years	5.00	3.23	8 publications, 3 conferences, 1 sponsored project
			Amount received (Rs.): 5.00		

Total amount (Lacs) received for the past 3 years : 5.00

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	Modern Manufacturing Process Lab	10	Wire EDM, MIkrotool DT110, CNC Plasma cutting machine	9 Hrs	Sohrai Mahto	Technician	Diploma
2	Computer Aided Manufacturing Lab	20	CNC Turning and Milling	6 Hrs	Rajendra Nayak	Technical Superintendent	Diploma
3	Manufacturing Simulation Lab	30	35 PCs. Licensed Software such as CATIA, MINITAB, SPSS, Z-Cast Witness, etc.	12 Hrs	Kalawati Mahto	Attendant 4	B.A Hons.
4	Work study and Ergonomic Lab	30	Ergonomic cycle, EMG recorder, Various Setup for time & Motion Study	6 Hrs	Binand Kumar	Junior Superintendent	B.A
5	Metrology lab	30	Calipers and gauges, Profilometer, Surface roughness	6 Hrs	Binand Kumar	Junior Superintendent	B.A
6	Metallurgy Lab	30	Muffle Furnaces, Polishing Machines, Optical Microscope, Ericssen Cupping test, Jomny Hardness	6 Hrs	Binand Kumar; Arun Maht	Junior Superintendent; Te	B.A; ITI

7	Manufacturing Automation Lab	30	PLC, Automation training kits, CNC trainer, CAM software	6 Hrs	Prabhat Kr Singh	Senior Technical Superint	M.Sc.
8	Carpentry Shop	15	Wood Turning Lathe Machine, Drilling Machine, Various woodworking tools, Wood planer, Band saw	27 Hrs.	Roylene Bage; Manish Kr	Technician; Trainee Asst.	ITI; IA
9	Foundry Shop	15	Sand casting setup, Sand mixer, Moulding machines, Inductions furnace, Electrical resistance furnace, Stir	27 Hrs.	S. R. Mahto; Pradeep Kr.	Technical Superintendent;	BE; Diploma; ITI
10	Machine Shop	15	CNC Lathe, CNC Milling, CNC Grinder, Lathe machines, Milling machines, Shaper machines, Planer	27 Hrs.	K N Singh; D.K. Rajak; Sa	Technician; Jr. Technician;	Diploma; ITI; Non-Matric;
11	Welding Shop	15	MMAW, SAW, TIG, MIG, Spot welding, Robotic MIG/MAG and TIG welding, Gas Welding,	27 Hrs.	Rajendra Nayak; Umesh K	Technical Superintendent;	Diploma; ITI; Matric
12	Fitting Shop	15	Drilling Machines, Various files, Chisels, Marker, Surface plate, Vises etc.	18 Hrs.	Alfred Tigga	Technician	ITI

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Manufacturing Simulation Laboratory	Fire Extinguisher installed at exit way with the complete operation instruction
2	Computer aided Manufacturing Laboratory	Fire Extinguisher installed at exit way. The precautions during working are displayed in the posters and First-aid kit installed in the lab. CNC machine safety interlocks, Operator training, emergency stop buttons
3	Modern Manufacturing Process Laboratory	Fire Extinguisher installed at the exit way with complete operation instructions. The machine's operational procedures and safety measures during work are displayed in the lab. A UPS with a battery system is kept in the corner of the lab.
4	Manufacturing Automation Laboratory	Fire Extinguisher installed at exit way with the complete operation instruction
5	Carpentry Shop	First Aid Box is installed at broad exit way Procedure for usage of fire extinguisher displayed at proper place All safety placard/banner displayed at proper place All safety rules/procedures displayed at proper place Dress code banner is displayed Dress code is followed Dust control, safety goggles, cutting tool safety instructions
6	Welding shop	First Aid kit is installed at exit way Procedure for usage of fire extinguisher displayed at proper place All safety placard/banner displayed at the proper place All safety rules/procedures displayed at the proper place Dress code is followed Welding shields, hand gloves, fire extinguisher, safety shoes, exhaust ventilation

7	Manufacturing System Laboratory	First Aid kit is installed at the exit way
8	Foundry shop.	Sand bed and Fire Extinguisher is installed near by the broad exit way Heat-resistant gloves, face shields, sand handling precautions, fire buckets
9	Metallurgy and Metrology lab	Fire Extinguisher and First Aid kit installed Broad exit way Chemical handling instructions, first aid box, fire extinguisher Proper handling instructions for precision instruments, clean working environment
10	Fitting shop	First Aid kit is installed at exit way Procedure for usage of fire extinguisher displayed at proper place All safety placard/banner displayed at the proper place All safety rules/procedures displayed at the proper place Dress code is followed Safe tool handling instructions, first aid kit.
11	Machine Shop	First Aid Box is installed at broad exit way Procedure for usage of fire extinguisher displayed at proper place All safety placard/banner displayed at proper place All safety rules/procedures displayed at proper place Dress code banner is displayed Dress code is followed Machine guards, emergency stop switches, safety instructions, PPE usage

D3. Project Laboratory/Research Laboratory

The department is having two dedicated computing labs containing 30 and 15 computers in each department installed with MINITAB, NX10, CATIA, MATLAB, ZCAST. Other than the equipment's in the entire workshop, the advanced facility is being utilized by the students/researchers as per their subject requirements is listed below

Sl.No.	**Equipment Name**	**Specification of Equipment/** **(Make and Model)**	**Area of Research**	**Current Status (working/not working).**	**Availability for**
1.	Micro Machining Machine Tool	Micro Tools DT-110 MICRO TOOLS PTE LTD	Integrated Multi-Process Micro-Machining Machine Tool 1. Micro Turning 2. Micro Milling 3. Micro WEDM 4. Micro WEDG 5. Micro EDM	Working	PhD Research PG and UG students
2.	Elektra CNC Wire Cut EDM	Electronica M/C Tools Pvt. Ltd. (MAXICUT-734)	Preparing for workpiece for any conductive material	Working	PhD Research
3.	Cupping Test Machine	ERICHSEN, 2017	Formability Study of any material	Working	PG and UG students
4.	Microwave Heating	Hybrid Microwave Furnace	Combination of conventional and Microwave heating with working temperature up to RT to 1600°C	Working	PhD Research
5.	Ultrasonic Flow Detector	Swift Scan-360 Ultrasonic Flaw Detector	Flaw detector together with high accurate thickness measured, Auto Calibration: Velocity, Probe Delay, Angle.	Working	PG and UG students
6.	Force Dynamometer	Kristler 9572B	Force Measurement during manufacturing process	Working	PhD Research PG and UG students

7.	Infrared thermal imaging Camera	CA1888, Chauvin Arnoux	Real Time thermal imaging during manufacturing Processes	Working	PhD Research PG and UG students
8.	3D Printer	Creality, Ender 3Pro	3D printing	Working	PhD Research PG and UG students
9.	3D Engraver	Snapmaker, SNAP(3in1)	3D printing and engraving	Working	PhD Research PG and UG students
10.	TIG/MIG Welding	EWAC alloys Ltd. Trans synergic 500 comfort	Welding	Working	PhD Research
11.	Robotic TIG/MIG Welding	Model: Cloos, Germany, 2021-22	Welding	Working	PG and UG students
12.	Stir Casting & Attachment (squeeze die casting, centrifugal casting, ultra-sonic, vacuum cast, pre heater oven)	Model-SWAIM Equipment, 26.02.2016 Attachment: 21.09.2016-17	Casting	Working	PhD Research
13.	Electric Resistance Furnace	M.G. Electrical	Heat treatment process	Working	PhD Research, PG and UG students
14.	Optical Microscope	Carl Zeiss Microscope AXIO, 2017	Generate magnified images of small objects, average grain size is calculated.	Working	PhD Research, PG and UG students

15.	Contour Tracer	TAYLOR HOBSON, 2018	Simple analysis functions such as basic dimensioning, distance measurement to more complex functions like full contour analysis and Gothic arch analysis for more demanding applications.	Working	PG and UG students
16.	Slow speed Diamond Saw/cutter	Metatech, 2021-22	For precise specimen cutting	Working	PhD Research
17.	Muffle furnace (4 no's)	Delhi Metco, 2018	Heat treatment of Specimen	All Working	PG and UG students
18.	Specimen Mounting Machine	Delhi Metco, 2018	For Mounting Metallurgical Specimen	Working	PhD Research
19.	Specimen cutting Machine	Banbros, 2018	For specimen cutting	Working	PG and UG students
20.	CNC Lathe	Jyoti CNC Automation limited, 2019	Lathe operation	Working	PhD Research
21.	CNC Milling	CadMech Engg., 2018	Milling operations	Working	PG and UG students
22.	CNC Surface Grinding (refer Fig. 6.4.4)	Prayosha Enterprise, 2020	Surface Grinding	Working	PhD Research
23.	Jomny Hardenability End quench	Matlab, 2018	Hardenability Test	Working	PG and UG students
24.	CNC Air Plasma (Refer Fig. 6.4.4)	S & S Enterprise, 2020	Metal profile cutting	Working	PhD Research
25	Automatic Double Disc Polishing Machine	Banbros, 2018	Specimen Polishing	Working	PhD Research, PG and UG students

26.	840D MILL and 849D TURN	SIEMENS	Design and Simulation	Working	PhD Research, PG and UG students
27.	21i M MILL	FANUC	Design and Simulation	Working	PhD Research, PG and UG students
28.	CATIA V5	EDS	Design	Working	PhD Research, PG and UG students
29.	MINITAB 17	MINITAB	Statistical Analysis	Working	PhD Research, PG and UG students
30.	NX10	Siemens	Design and Simulation	Working	PhD Research, PG and UG students
31.	ZCast	**DHIO**	Design and Simulation	Working	PG and UG students
32.	Afdex	AFDEX	Design and Simulation	Working	PhD Research, PG and UG students
33.	Witness	Lanner	Simulation	Working	PG and UG students
34.	1 KW Laser welding system	IPG Photonics (Fabricator: Kirti Lasers)	Laser welding, cutting	Working	PhD Research, PG and UG students
35	500 W Laser welding system (Refer to Fig. 7.5.1)	IPG Photonics (Fabricator: Kirti Lasers)	Laser welding	Working	PhD Research, PG and UG students
36	Microhardness tester machine (Refer to Fig. 7.5.2)	Matsuzawa	Microhardness measurements	Working	PhD Research, PG and UG students

37	Metal 3D printer (Refer to Fig. 7.5.3)	Melito	Laser wire-DED additive manufacturing	Working	PhD Research, PG and UG students

Fig. 7.5.1: 500 W Laser welding system

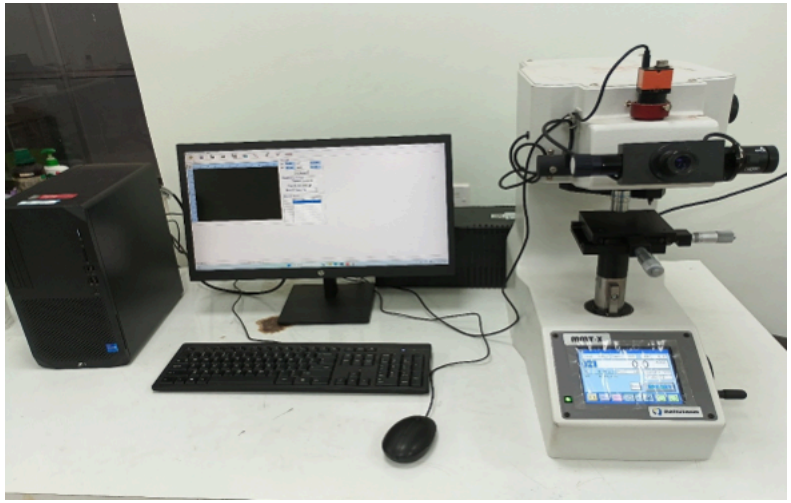

Fig. 7.5.2: Microhardness tester machine

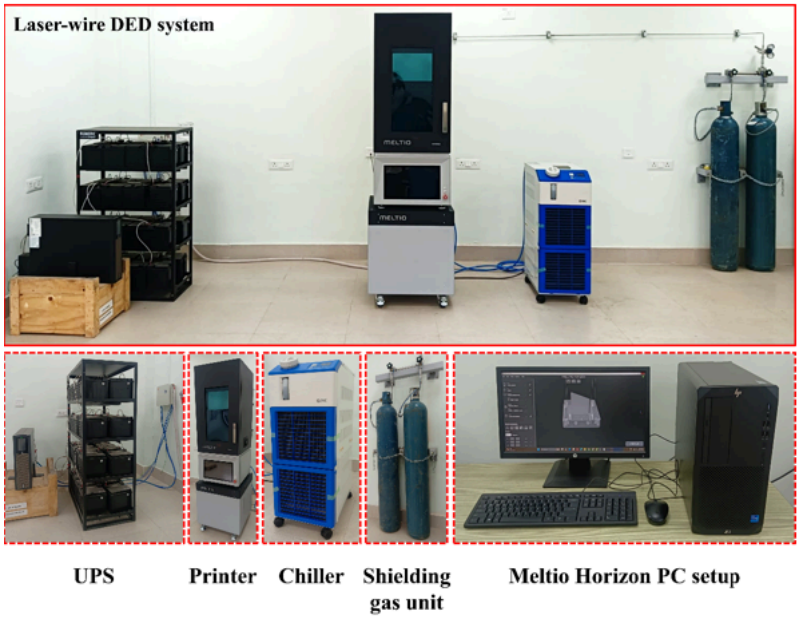

Fig. 7.5.3: Metal 3D printer

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)	930	46	52	73	122
2024-25(CAYm1)	930	46	51	75	121
2025-26(CAY)	960	48	59	85	134

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	2011500000	370599000	1194079000	260663000	1119478000	339555000	636654000	278254000
Library	22959000	18534000	21276000	15687000	27967000	11832000	22582000	20444000
Laboratory equipment	245729000	95090000	265857000	80293000	250363000	114579000	211627000	57947000
Teaching and non-teaching staff salary	1521173000	1508170000	1483810000	1429231000	1314119000	1332191000	1175614000	1116461000
Outreach Programs	11000000	11596000	11350000	8496000	10500000	5323000	12000000	4620000
R&D	50480000	119734000	70910000	114951000	65500000	104092000	69542000	85378000
Training, Placement and Industry linkage	5100000	2798000	6600000	3230000	10025000	4907000	7500000	3576000
SDGs	39400000	25835000	40094000	35824000	30141000	18763000	28965000	20288000
Entrepreneurship	6200000	3616000	5000000	1986000	5150000	1718000	9630000	1152000
Others, specify	630202000	776873000	554288000	480066000	563743000	424019000	376877000	325526000
Total	**4543743000**	**2932845000**	**3653264000**	**2430427000**	**3396986000**	**2356979000**	**2550991000**	**1913646000**

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	375000	1160000	4385000	4052000	5800000	10531000	6280000	4485000

Software	1750000	1891000	180000	119000	530000	86000	1848000	2420000
SDGs	1000000	700000	1000000	938000	600000	440000	600000	632000
Support for faculty development	200000	40000	200000	0	200000	51000	200000	117000
R & D	200000	20000	200000	0	200000	51000	200000	34000
Industrial Training, Industry expert, Internship	1350000	342000	1450000	963000	2150000	1747000	2050000	1638000
Miscellaneous Expenses*	1550000	981000	1565000	1503000	1362000	1054000	1207000	1006000
Total	**6425000**	**5134000**	**8980000**	**7575000**	**10842000**	**13960000**	**12385000**	**10332000**