

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 : 10645	Date of Submission : 02-06-2025

PART A- Profile of the Institute

A1.Name of the Institute : NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA	
Year of Establishment : .	Location of the Institute:
A2. Institute Address :NATIONAL INSTITUTE TECHNOLOGY	
City:ROURKELA	State:Odisha
Pin Code:769008	Website:www.nitrkl.ac.in
Email:REGISTRAR@NITRKL.AC.IN	Phone No(with STD Code):0661-2472050
A3. Name and Address of the Affiliating University (if any) :	
Name of the University : NIL	City:
State :	Pin Code:
A4. Type of the Institution : NIT	
A5. Ownership Status :	

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

- No. of UG programs: **16**
- No. of PG programs: **35**

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	2013	--	Architecture
2	Engineering & Technology	UG	Artificial Intelligence and Data Science	2024	--	Computer Science and Engineering
3	Engineering & Technology	PG	Biomedical Engineering	2007	--	Biotechnology and Medical Engineering
4	Engineering & Technology	UG	Biomedical Engineering	2007	--	Biotechnology and Medical Engineering
5	Engineering & Technology	UG	Biotechnology	2007	--	Biotechnology and Medical Engineering
6	Engineering & Technology	PG	Biotechnology	2007	--	Biotechnology and Medical Engineering
7	Engineering & Technology	UG	Ceramic Engineering	1994	--	Ceramic Engineering
8	Engineering & Technology	PG	Ceramic Engineering (Integrated/Dual)	2010	--	Ceramic Engineering
9	Engineering & Technology	UG	Chemical Engineering	1963	--	Chemical Engineering

10	Engineering & Technology	PG	Chemical Engineering	1981	--	Chemical Engineering
11	Engineering & Technology	PG	Chemical Engineering (Integrated/Dual)	2010	--	Chemical Engineering
12	Engineering & Technology	UG	Civil Engineering	1961	--	Civil Engineering
13	Engineering & Technology	PG	Communication and Networks	2012	--	Electronics and Communication Engineering
14	Engineering & Technology	PG	Computer Science and Engineering	1995	--	Computer Science and Engineering
15	Engineering & Technology	UG	Computer Science and Engineering	1986	--	Computer Science and Engineering
16	Engineering & Technology	PG	Control and Automation	2010	--	Electrical Engineering
17	Engineering & Technology	PG	Cryogenic and Vacuum Technology	2013	--	Mechanical Engineering
18	Engineering & Technology	UG	Electrical Engineering	1961	--	Electrical Engineering
19	Engineering & Technology	UG	Electronics & Communication Engineering	2004	--	Electronics and Communication Engineering
20	Engineering & Technology	UG	Electronics & Instrumentation Engineering	1987	--	Electronics and Communication Engineering
21	Engineering & Technology	PG	Electronics & Instrumentation Engineering	2010	--	Electronics and Communication Engineering
22	Engineering & Technology	PG	Electronics Systems & Communication	2003	--	Electrical Engineering
23	Engineering & Technology	PG	Energy and Environmental Engineering	2018	--	Chemical Engineering
24	Engineering & Technology	PG	Environmental Engineering	2023	--	Civil Engineering
25	Engineering & Technology	UG	Food Processing and Engineering	2013	--	Food Processing and Engineering
26	Engineering & Technology	PG	Food Processing and Engineering	2018	--	Food Processing and Engineering
27	Engineering & Technology	PG	Geotechnical Engineering	1971	--	Civil Engineering
28	Engineering & Technology	PG	Industrial Ceramics	2012	--	Ceramic Engineering
29	Engineering & Technology	UG	Industrial Design	2010	--	Industrial Design
30	Engineering & Technology	PG	Industrial Design	2013	--	Industrial Design
31	Engineering & Technology	PG	Information Security	2007	--	Computer Science and Engineering
32	Engineering & Technology	PG	Machine Design & Analysis	1970	--	Mechanical Engineering
33	Engineering & Technology	PG	Manufacturing and Automation Engineering	1970	--	Mechanical Engineering
34	Engineering & Technology	UG	Mechanical Engineering	1961	--	Mechanical Engineering
35	Engineering & Technology	UG	Metallurgical & Materials Engineering	1963	--	Metallurgical and Materials Engineering

36	Engineering & Technology	PG	Metallurgical and Materials Engineering	1970	--	Metallurgical and Materials Engineering
37	Engineering & Technology	PG	Metallurgical and Materials Engineering (Integrated/Dual)	2010	--	Metallurgical and Materials Engineering
38	Engineering & Technology	PG	Microwave & Radar Engineering	2018	--	Electronics and Communication Engineering
39	Engineering & Technology	PG	Mining Engineering	2013	--	Mining Engineering
40	Engineering & Technology	UG	Mining Engineering	1979	--	Mining Engineering
41	Engineering & Technology	PG	Mining Engineering (Integrated/Dual)	2010	--	Mining Engineering
42	Engineering & Technology	PG	Power Electronics & Drives	2007	--	Electrical Engineering
43	Engineering & Technology	PG	Power Systems Engineering	2017	--	Electrical Engineering
44	Engineering & Technology	PG	Signal & Image Processing	2012	--	Electronics and Communication Engineering
45	Engineering & Technology	PG	Software Engineering	2010	--	Computer Science and Engineering
46	Engineering & Technology	PG	Structural Engineering	1971	--	Civil Engineering
47	Engineering & Technology	PG	Thermal Engineering	2005	--	Mechanical Engineering
48	Engineering & Technology	PG	Transportation Engineering	2010	--	Civil Engineering
49	Engineering & Technology	PG	VLSI Design & Embedded Systems	2005	--	Electronics and Communication Engineering
50	Engineering & Technology	PG	Water Resource Engineering	2010	--	Civil Engineering
51	Management	PG	Masters in Business Administration	2010	--	Management

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

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

Name of the Department	Having Allied Departments	Name of the Program	Program Level
Industrial Design	No	Industrial Design	UG
Mechanical Engineering	No	Mechanical Engineering	UG
Mining Engineering	No	Mining Engineering	UG
Civil Engineering	No	Civil Engineering	UG
Ceramic Engineering	No	Ceramic 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
1	Mechanical Engineering	UG	1961 / --	60	Yes	2009	113	2009	NA	Granted accreditation for 3 years for the period (specify period)	2022	2025	4

Sanctioned Intake for Last Five Years for the Machine Design & Analysis	
Academic Year	Sanctioned Intake
2024-25	113
2023-24	113
2022-23	113
2021-22	112
2020-21	112
2019-20	106

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 :	Saroj Kumar Patel
B. Nature of appointment:	Regular
C. Qualification:	Ph.D

B3. Program Details

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

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2024-25 (CAY)	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)	2020-21 (CAYm4)	2019-20 (CAYm5)	2018-19 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	113	113	113	112	112	106	89
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	119	118	116	121	122	119	101
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	22	22	17	15

Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	119	118	116	143	144	136	116
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CAY= Current Academic Year. CAYm1= Current Academic Year Minus 1 CAYm2= Current Academic Year Minus 2. LYG= Last Year Graduate. LYGm1= Last Year Graduate Minus 1. LYGm2= Last Year Graduate Minus 2.

B4. Enrolment Ratio in the First Year

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

Year of entry	N (From Table 4.1)	N1 (From Table 4.1)	N4 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2024-25 (CAY)	113	119	0	105.31
2023-24 (CAYm1)	113	118	0	104.42
2022-23 (CAYm2)	113	116	0	102.65

Average $[(ER1 + ER2 + ER3) / 3] = 104.13 \approx 100$

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

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

Item	(2020-21) LYG	(2019-20) LYGm1	(2018-19) LYGm2
A*=(No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).	144.00	136.00	116.00
B=No. of students who graduated from the program in the stipulated course duration	130.00	134.00	102.00
Success Rate (SR)= (B/A) * 100	90.28	98.53	87.93

Average SR of three batches $((SR_1 + SR_2 + SR_3)/3)$: 92.25

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

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

Academic Performance	CAYm1(2023-24)	CAYm2(2022-23)	CAYm3 (2021-22)
Mean of CGPA or mean percentage of all successful students(X)	7.51	7.21	8.35
Y=Total no. of successful students	114.00	114.00	136.00
Z=Total no. of students appeared in the examination	116.00	115.00	136.00
API $[X*(Y/Z)]$	7.38	7.15	8.35

Average API $[(AP1+AP2+AP3)/3]$: 7.63

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

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

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2rd year/10)	7.43	7.91	8.21
Y=Total no. of successful students	113.00	136.00	139.00
Z=Total no. of students appeared in the examination	114.00	136.00	139.00
API $[X * (Y/Z)]$	7.36	7.91	8.21

Average API $[(AP1 + AP2 + AP3)/3]$: 7.83

B8. Academic Performance of the Third Year Students of the Program

Table No.B8.1: Academic Performance of the Third Year Students of the Program

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10)	7.92	7.99	7.96
Y=Total no. of successful students	136.00	139.00	134.00
Z=Total no. of students appeared in the examination	136.00	139.00	134.00
API [X*(Y/Z)]:	7.92	7.99	7.96

Average API [(AP1 + AP2 + AP3)/3] : 7.96

B9. Placement, Higher Studies, and Entrepreneurship

Table No.B9.1: Placement, higher studies, and entrepreneurship details.

Item	LYG (2020-21)	LYGm1(2019-20)	LYGm2(2018-19)
FS*=Total no. of final year students	139.00	134.00	107.00
X=No. of students placed	100.00	98.00	96.00
Y=No. of students admitted to higher studies	15.00	12.00	10.00
Z= No. of students taking up entrepreneurship	2.00	1.00	1.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	84.17	82.84	100.00

Average Placement Index = (P_1 + P_2 + P_3)/3: 89.00 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	Alok Satapathy	XXXXXXXX56E	Ph.D	NIT Rourkela	Thermal Engineering	22/06/1993	31.10	Lecturer	Professor	02/02/2018	Regular	Yes		No
2	Ashirbad Jana	XXXXXXXX70D	Ph.D	IIT Guwahati	Machine Design and Analysis	05/07/2024	0.9	Assistant Professor	Assistant Professor		Regular	Yes		No
3	Ashok Kumar Satapathy	XXXXXXXX14Q	Ph.D	NIT Rourkela	Thermal Engineering	18/12/1996	28.4	Lecturer	Professor	02/02/2018	Regular	Yes		No
4	Ashwin Lakshman Nandagiri	XXXXXXXX00G	Ph.D	IIT Bombay	Thermal Engineering	30/07/2024	0.9	Assistant Professor	Assistant Professor		Regular	Yes		No
5	Bukke Kiran Naik	XXXXXXXX40C	Ph.D	IIT Guwahati	Thermal Engineering	03/04/2020	5.1	Assistant Professor	Assistant Professor		Regular	Yes		No

6	Chandan Kumar Biswas	XXXXXXXX25E	Ph.D	IIT Kharagpur	Production Engineering	05/09/1986	38.8	Lecturer	Professor	02/02/2018	Regular	Yes		No
7	Dayal Ramakrushna Parhi	XXXXXXXX07R	Ph.D	Cardiff University UK	Machine Design and Analysis	15/10/1992	32.6	Lecturer	Professor	01/07/2008	Regular	Yes		No
8	Gaurav Kumar	XXXXXXXX16C	Ph.D	IIT Roorkee	Production Engineering	18/10/2023	1.6	Assistant Professor	Assistant Professor		Regular	Yes		No
9	Haraprasad Roy	XXXXXXXX98B	Ph.D	IIT Kharagpur	Machine Design and Analysis	25/09/2008	16.7	Assistant Professor	Associate Professor	29/03/2023	Regular	Yes		No
10	Jonnalagadda Srinivas	XXXXXXXX68E	Ph.D	Andhra University	Machine Design and Analysis	27/08/2009	15.8	Associate Professor	Professor	29/03/2023	Regular	Yes		No
11	Jnana Ranjan Senapati	XXXXXXXX20J	Ph.D	IIT Kharagpur	Thermal Engineering	22/02/2018	7.2	Assistant Professor	Assistant Professor		Regular	Yes		No
12	Kalipada Maity	XXXXXXXX63F	Ph.D	Sambalpur University	Production Engineering	21/02/1986	39.2	Lecturer	Professor	01/07/2006	Regular	Yes		No
13	Kaustav Chaudhury	XXXXXXXX79M	Ph.D	IIT Kharagpur	Thermal Engineering	26/02/2018	7.2	Assistant Professor	Assistant Professor		Regular	Yes		No
14	Kishore Singh Patel	XXXXXXXX55D	Ph.D	IISc	Thermal Engineering	11/03/2020	5.1	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Manoj Kumar Moharana	XXXXXXXX26Q	Ph.D	IIT Kanpur	Thermal Engineering	30/04/2012	13	Assistant Professor	Associate Professor	29/03/2023	Regular	Yes		No
16	Manoj Masanta	XXXXXXXX39K	Ph.D	IIT Kharagpur	Production Engineering	25/07/2011	13.9	Assistant Professor	Associate Professor	01/07/2024	Regular	Yes		No
17	PS Balaji	XXXXXXXX22G	Ph.D	Curtin university Australia	Machine Design and Analysis	19/02/2018	7.2	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Rabindra Kumar Behera	XXXXXXXX57D	Ph.D	NIT Rourkela	Machine Design and Analysis	24/06/1996	28.10	Lecturer	Professor	29/03/2023	Regular	Yes		No
19	Rudranaryan Kandi	XXXXXXXX77L	Ph.D	IIT Delhi	Production Engineering	06/04/2023	2	Assistant Professor	Assistant Professor		Regular	Yes		No
20	S. Anbarasu	XXXXXXXX65P	Ph.D	IIT Guwahati	Thermal Engineering	13/07/2015	9.9	Assistant Professor	Assistant Professor		Regular	Yes		No
21	S. Murugan	XXXXXXXX53B	Ph.D	Anna University	Thermal Engineering	11/09/2008	16.7	Assistant Professor	Professor	02/05/2018	Regular	Yes		No
22	Sandhyarani Biswas	XXXXXXXX24F	Ph.D	NIT Rourkela	Production Engineering	01/07/2006	18.10	Assistant Professor	Associate Professor	01/07/2024	Regular	Yes		No
23	Saroj Kumar Patel	XXXXXXXX00H	Ph.D	IIT Kharagpur	Production Engineering	19/10/1990	34.6	Lecturer	Professor	02/02/2018	Regular	Yes		Yes
24	Saurav Datta	XXXXXXXX62R	Ph.D	Jadavpur University	Production Engineering	11/08/2008	16.8	Assistant Professor	Professor	01/07/2024	Regular	Yes		No

25	Siba Sankar Mahapatra	XXXXXXXX85J	Ph.D	IIT Kharagpur	Production Engineering	21/10/1986	38.6	Lecturer	Professor	02/07/2007	Regular	Yes		No
26	Soumyajit Roy	XXXXXXXX03E	Ph.D	IIT Kharagpur	Machine Design and Analysis	14/06/2023	1.10	Assistant Professor	Assistant Professor		Regular	Yes		No
27	Srinivas Behera	XXXXXXXX44G	Ph.D	IIT Madras	Production Engineering	03/04/2023	2.1	Assistant Professor	Assistant Professor		Regular	Yes		No
28	Subrata Kumar Panda	XXXXXXXX79G	Ph.D	IIT Kharagpur	Machine Design and Analysis	01/07/2011	13.10	Assistant Professor	Professor	29/03/2023	Regular	Yes		No
29	Sukesh Chandra Mohanty	XXXXXXXX59K	Ph.D	NIT Rourkela	Machine Design and Analysis	16/09/1991	33.7	Lecturer	Professor	02/02/2018	Regular	Yes		No
30	Suman Ghosh	XXXXXXXX64K	Ph.D	IIT Kharagpur	Thermal Engineering	25/07/2011	13.9	Assistant Professor	Associate Professor	29/03/2023	Regular	Yes		No
31	Sumit Kumar	XXXXXXXX03J	Ph.D	IIT Bombay	Thermal Engineering	07/02/2018	7.2	Assistant Professor	Assistant Professor		Regular	Yes		No
32	Suraj Kumar Behera	XXXXXXXX87F	Ph.D	NIT Rourkela	Machine Design and Analysis	03/01/2012	13.4	Assistant Professor	Associate Professor	01/07/2024	Regular	Yes		No
33	Susanta Kumar Sahoo	XXXXXXXX72A	Ph.D	Utkal University	Production Engineering	02/02/2000	25.3	Lecturer	Professor	01/07/2008	Regular	Yes		No
34	Sushil Kumar Rathore	XXXXXXXX26M	Ph.D	IIT Kharagpur	Thermal Engineering	21/02/2018	7.2	Assistant Professor	Associate Professor	01/07/2024	Regular	Yes		No
35	Tanmoy Bose	XXXXXXXX39K	Ph.D	IIT Kharagpur	Machine Design and Analysis	01/06/2023	1.11	Assistant Professor	Assistant Professor		Regular	Yes		No
36	Tarapada Roy	XXXXXXXX56N	Ph.D	IIT Guwahati	Machine Design and Analysis	06/02/2009	16.3	Assistant Professor	Associate Professor	29/03/2023	Regular	Yes		No
37	Samir Kumar Acharya	XXXXXXXX52N	Ph.D	Sambalpur University	Machine Design and Analysis	16/02/1987	37.4	Lecturer	Professor	01/07/2009	Regular	No	28/06/2024	No
38	Saroj Ray	XXXXXXXX37G	Ph.D	IIT Madras	Thermal Engineering	08/07/2024	0.9	Assistant Professor	Assistant Professor		Regular	Yes		No
39	Ranjit Kumar Sahoo	XXXXXXXX02K	Ph.D	IIT Kharagpur	Thermal Engineering	03/04/1984	37.9	Lecturer	Professor	23/05/2002	Regular	No	31/12/2021	No
40	Ranjit Kumar Sahoo	XXXXXXXX02K	Ph.D	IIT Kharagpur	Thermal Engineering	12/05/2022	1	Professor	Professor	12/05/2022	Contractual Fulltime	No	12/05/2023	No
41	Samir Kumar Acharya	XXXXXXXX52N	Ph.D	Sambalpur University	Machine Design and Analysis	01/02/2024	0.4	Professor	Professor	01/02/2024	Contractual Fulltime	No	29/06/2024	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 Department4

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

Description	CAY(2024-25)	CAYm1 (2023-24)	CAYm2 (2022-23)
UG1.B	113	113	112
UG1.C	113	112	112
UG1.D	112	112	106
UG1: Mechanical Engineering	338	337	330
PG1.A	15	15	25
PG1.B	15	25	25
PG1: Cryogenic and Vaccum Technology	30	40	50
PG2.A	25	25	25
PG2.B	25	25	25
PG2: Machine Design & Analysis	50	50	50
PG3.A	25	25	25
PG3.B	25	25	25
PG3: Manufacturing and Automation Engineering	50	50	50
PG4.A	25	25	25
PG4.B	25	25	25
PG4: Thermal Engineering	50	50	50
DS=Total no. of students in all UG and PG programs in the Department	518	527	530
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= 518	S2= 527	S3= 530
DF=Total no. of faculty members in the Department	37	34	31
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= 37	F2= 34	F3= 31

Description	CAY(2024-25)	CAYm1 (2023-24)	CAYm2 (2022-23)
FF=The faculty members in F who have a 100% teaching load in the first-year courses	0	0	0
Student Faculty Ratio (SFR)=S/(F-FF)	SFR1= 14.00	SFR2= 15.50	SFR3= 17.10
Average SFR for 3 years	SFR= 15.53		

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 = $2.5 \times [(10X + 4Y) / RF]$
2024-25(CAY)	37	0	25.00	37.00
2023-24(CAYm1)	34	0	26.00	32.69
2022-23(CAYm2)	31	0	26.00	29.81

C4. Faculty Cadre Proportion

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

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

Year	Professors		Associate Professors		Assistant Professors	
	Required RF1	Available AF1	Required RF2	Available AF1	Required RF3	Available AF3
2024-25	2.00	14.00	5.00	8.00	17.00	15.00
2023-24	2.00	14.00	5.00	5.00	17.00	15.00
2022-23	2.00	11.00	5.00	4.00	17.00	15.00
Average	RF1=2.00	AF1=13.00	RF2=5.00	AF2=5.67	RF2=17.00	AF2=15.00

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	Prof. Samir Kumar Acharya	Visiting Professor	NIT Rourkela	Seminar and Technical Writing	39.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Prof. Ranjit Kumar Sahoo	Visiting Professor	NIT Rourkela	Refrigeration and Cryogenic Laboratory	39.00
2	Prof. Ranjit Kumar Sahoo	Visiting Professor	NIT Rourkela	Seminar and Technical Writing	39.00
3	Prof. Ranjit Kumar Sahoo	Visiting Professor	NIT Rourkela	Computational Methods in Thermal Engineering	39.00

(CAYm3)

C6. Academic Research

Table No. C6.1: Faculty publication details.

S.No.	Item	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)
1	No. of peer reviewed journal papers published	298	262	235
2	No. of peer reviewed conference papers published	37	33	29
3	No. of books/book chapters published	21	16	7

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. Jonnalagadda Srinivas	Prof. Dayal Ramakrushna Parhi, Dr. Balaji P.S., Prof. Santos Kumar Das	Mechanical Engineering	Capacity building for Human Resource Development in Unmanned Aircraft System. (Drone and Related Technology)	MEITY	Jul 2023 - Jul 2028	155.00
Dr. Kishore Singh Patel	Dr. Bukke Kiran Naik, Prof. Akhilesh Kumar Sahu	Mechanical Engineering	Design of Micro cryogenic coolers for phased array receiver	ISRO	Mar 2023 - Mar 2026	37.23
Prof. Saurav Datta	Prof. Tarapada Roy, Prof. Debasis Chaira	Mechanical Engineering	Parametric Studies for Direct Metal Laser Sintering (DMLS) of Inconel 718: Fabrication of NACA 2412 Aerofoil prototype by Utilizing Conventional Machining wastes and Dynamic Response Performance Analysis	CSIR	Nov 2023 - Nov 2026	12.00
Prof. Suraj Kumar Behera		Mechanical Engineering	Experimental investigation on the performance of various optimized micro-grooved water-lubricated bearing for the rotors used in underwater vehicles and machinery	IIT Guwahati Technology Innovation and Development Foundation	Feb 2024 - Feb 2026	14.50
Dr. Tanmoy Bose		Mechanical Engineering	Development of support vector machines based software for cavitation level monitoring in a Francis Turbine	CPRI	Mar 2024 - Mar 2026	34.73
Prof. Tarapada Roy	Prof. Somnath Maity, Dr. Moumita Tewary	Mechanical Engineering	Nonlinear Dynamic Analysis and Development of soft Fish Robot	IIT Guwahati Technology Innovation and Development Foundation	Mar 2024 - Feb 2026	14.50
Dr. Vipul M. Patel	Dr. Sumit Kumar	Mechanical Engineering	Development of a Thermal Gradient Assisted Self Positioning Laser Head for Photothermal Application	Science & Engineering Research Board(SERB)	Apr 2024 - Apr 2026	31.24
Dr. Bukke Kiran Naik		Mechanical Engineering	ustainable Hydrophilic Membrane for Flue-gas Heat Recovery	SERB	Jul 2023- June 2024	11.84
						Amount received (Rs.):311.04

(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. Rabindra Kumar Behera		Mechanical Engineering	Vibration Analysis of Underwater Pipe Line	IIT Guwahati Technology Innovation and Development Foundation	Aug 2022 - Aug 2025	76.80
Prof. Dayal Ramakrushna Parhi		Mechanical Engineering	Development and Analysis of Intelligent Integrated Water Habitat Robot for Surveillance, Monitoring and Cleaning	IIT Guwahati Technology Innovation and Development Foundation	Aug 2022 - Mar 2026	105.00
Dr. Tanmoy Bose	Dr. Rakesh Sinha, Shri Abhishek Ghiya	Mechanical Engineering	Fully acoustics testing of low velocity impact damage in composite plate using the concept of local defect resonance	Aeronautics R&D Board (ARDB)	Oct 2022 - Oct 2025	30.48
Prof. Saurav Datta	Prof. Debasis Chaira, Prof. Tarapada Roy	Mechanical Engineering	haracterization of Additively Manufactured Maraging Steel 18Ni(300)Built Part: Fabrication and Dynamic Response Analysis of Topologically Optimized Auxetic Prototype Beam Aiming to Alleviate Sismic Protection of Archeological Heritage Constructions of Odisha	Science & Technology Department, Govt Of Odisha	Oct 2022 - Oct 2025	10.00
Dr. S. Anbarasu		Mechanical Engineering	Development and Implementation of Metal Hydride Canisters for Zero-Emission Heat and Energy Storage Systems	Science & Engineering Research Board(SERB)	Mar 2023 - Mar 2026	31.72
Dr. Bukke Kiran Naik	Dr. Kishore Singh Patel, Dr. S. S. Tripathy, Dr. A. N. Ray	Mechanical Engineering	Design & Development of Magneto-resistive Heat Switch	ISRO	Sep 2022- Aug 2024	29.70
Dr Balaji PS	Prof. J Srinivas	Mechanical Engineering	Design and Development of a Mechanical Metamaterial with Quasi-Zero-Stiffness behavior for Vibration Control applications	SERB, DST	Aug 2022- Jul 2025	20.40
						Amount received (Rs.):304.10

(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. Pratibha Sharma	Prof. Paresh G Kale, Prof. Anbarasu Subramanian	Electrical Engineering	DST-IIT Bombay Energy Storage Platform on Hydrogen	DST	Apr 2019 - Sep 2025	150.00
Dr. Balaji P.S.	Prof. Jonnalagadda Srinivas	Mechanical Engineering	Design and development of a mechanical metamaterial with Quasi-Zero-Stiffness behavior for vibration control applications	Science & Engineering Research Board (SERB)	Jan 2022 - Jul 2025	19.40
Dr. Bukke Kiran Naik		Mechanical Engineering	Design of Micro Cryogenic Coolers for Phased-array Receivers	ISRO	Sep 2022- Aug 2024	35.54
Prof. Jnana Ranjan Senapati		Mechanical Engineering	Indigenous development of a Novel Scheme for IRS System in Ocean-linears: Numerical and Experimental Investigations	DST	Nov 2021 - Oct 2024	36.18
						Amount received (Rs.):241.12

Total Amount (Lacs) Received for the Past 3 Years: 856.26

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
Kishore Singh Patel	J Srinivas	Mechanical Engineering	Efficiency testing of dedusting units at carbon area of smelter plant	NALCO	4 month	11.14
Sukesh Chandra Mohanty		Mechanical Engineering	Design verification and vetting of electric overhead travelling (EOT) crane	M/S Salcon Engineers & Fabricators	1 month	0.31
						Amount received (Rs.):11.45

(CAYm2)

(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. DP Jena	Dr. Balaji PS	Industrial Engineering	Design and Analysis of VTOL UAV	Yottec Technologies, Bangalore	6 months	7.70
Prof. Suraj Kumar Behera	Manoj Kumar	Mechanical Engineering	Design of the radial turbine and associated parts for turbo generator	Muteki Automacao Ltd	3 months	1.49
						Amount received (Rs.):9.19

Total amount (Lacs) received for the past 3 years: 20.64

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. Rudranarayana Kandi	Development of Direct Ink Writing to fabricate customized scaffolds for tissue Engineering	1Year	200000.00	200000.00	Development of extrusion-based 3D printer
Dr. Gaurav Kumar	Development of a Microwave process for Microchannel Fabrication in Poly methyl methacrylate	1Year	200000.00	200000.00	Developed an experimental setup for the microwave machining process
Dr. Soumyajit Roy	Development of a flexible multibody model of an AM 12 pantograph	1Year	200000.00	200000.00	Developed multibody model
Dr. Srinivas Behera	Development of Micro Scale deformation Set up	1Year	200000.00	200000.00	Developed one manuscript
			Amount received (Rs.): 800000.00		

(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
Dr. Tanmoy Bose	Numerical simulation of local defect resonance based vibrothermography	1 Year	200000.00	200000.00	Numerical simulation has been validated with the experiment.
			Amount received (Rs.): 200000.00		

(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 : 1000000.00

**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	Heat Power Lab	5	Diesel Engine Test Rigs, Air Compressor Rig, Axial Flow Compressor	6 hours/week	Mr. Narayan Prasad Bai	Sr. Technical Assistant	ITI Vehicle Mechanics
2	CFD Laboratory	20	FLUENT CFD, ASPEN Simulation Package	9 hours/week	Mr. Sudhananda Pani	Technician	Diploma in Mech Engg.
3	Heat Transfer Laboratory	3	Pin Fin Apparatus, Vapour Compression Test Rig	9 hours/week	Mr. Laxman Kumar Mah	Sr. Technical Assistant	Diploma in Mech Engg.
4	Cryogenics and Vacuum Lab	6	Linde Nitrogen Plant, Vacuum Brazing Furnace	6 hours/week	Mr. Laxman Kumar Mah	Sr. Technical Assistant	Diploma in Mech Engg.
5	Modeling and Simulation Lab	30	ANSYS, MATLAB, SolidWorks	12 hours/week	Mrs. Kanak Prabha Das	Technical Assistant	SG-II, AMIE (E&TC)
6	Production Engineering Lab	5	UTM, Lathe, EDM, Milling Machine	9 hours/week	Mr. Arabinda Khutia	Sr. Technician	ITI Fitter
7	Fluid Dynamics Lab	5	Pelton Wheel, Francis Turbine	6 hours/week	Mr. Naren Kumar Bisoi	Technician SG-I	ITI Vehicle Mechanics
8	Precision Engineering Lab	6	CMM, Micro Machine, Hardness Tester	6 hours/week	Mr. Kunal Nayak	Tech. Assistant SG-II	Diploma in Mech Engg
9	Gas Dynamics and Compressible Flow Lab	6	AVL Gas Analyzer, Smoke Meter	4 hours/week	Mr. Narayan Prasad Bai	Sr. Technical Assistant	ITI Vehicle Mechanics
10	Dynamics Lab	4	Gyroscope, Cam Analysis Machine	6 hours/week	Mr. Somnath Seth	Technician	ITI Fitter
11	Tribology Lab	5	Pin on Disc, Erosion Tester	9 hours/week	Mr. Narayan Prasad Bai	Sr. Technical Assistant	ITI Vehicle Mechanics
12	Manufacturing System Design	6	3D Printer, FMS System	9 hours/week	Mr. Sambit Senapati	Sr. Technical Assistant	Diploma in Tool & Die M
13	Material Testing & Stress Analysis Lab	5	UTM, Ultrasonic Manufacturing	6 hours/week	Mr. Kamal C Das	Tech. Assistant	ITI Machinist
14	Product Development Lab	6	Lathe, Welding, Drilling Machines	6 hours/week	Mr. Somanath Das	Technician SG-II	ITI Fitter & Machinist
15	Central Workshop	6	CNC Lathe, Welding, Carpentry Setup	12 hours/week	Mr. Sudhansu S. Samal	Sr. Technical Assistant	ITI Machinist

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Heat Power Lab	Do's and Don'ts displayed, technician-monitored operations, fire/first-aid kits, emergency power off, mandatory footwear.
2	CFD Lab	Do's and Don'ts displayed, fire/first-aid kits, emergency shutdown.
3	Heat Transfer Lab	Do's and Don'ts displayed, technician-monitored operations, fire/first-aid kits, emergency power off, mandatory footwear.
4	Cryogenics and Vacuum Lab	Do's and Don'ts displayed, technician-monitored operations, fire/first-aid kits, emergency power off, mandatory footwear.
5	Simulation and Modeling Lab	Do's and Don'ts displayed, fire/first-aid kits, emergency shutdown.
6	Production Engineering Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.
7	Fluid Dynamics Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.
8	Metrology Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.
9	Gas Dynamics and Compressible Flow Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.
10	Dynamics Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.

11	Tribology Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.
12	CAD/CAM Lab	Do's and Don'ts displayed, monitored operations, fire/first-aid kits, emergency shutdown.
13	Material Testing and Farming Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.
14	Product Development Lab	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.
15	Central Workshop	Do's and Don'ts displayed, apron, goggles, gloves compulsory, technician oversight, fire/first-aid kits.

D3. Project Laboratory/Research Laboratory

The department has established various project and research laboratories as Centres of Excellence (CoEs) that are utilized by UG, PG, and Ph.D. students. These labs support innovation, research, prototype development, and advanced experimentation beyond the regular curriculum. The laboratories are open 24×7 for academic and project-related activities.

Table No. 7.5: List of project laboratory/research laboratory /Centre of Excellence

S.N.	Name of the Laboratory
1	Stress Analysis Lab
2	Robotics Laboratory
3	Mechatronics Laboratory
4	Composite Fabrication Lab
5	Vibration Control and Analysis Lab
6	Sustainable Thermal Energy Systems Lab
7	Hydrogen Lab

PART E: First Year faculty and financial Resources
(Data to be filled in for the first year course faculty and budget allocation and utilization)

E1. First Year Student-Faculty Ratio (FYSFR)

Table No. E1.1: FYSFR details.

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members $((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4));$ Percentage= $((NS1*0.8) + (NS2*0.2))/RF$
2022-23(CAYm2)	916	46	43	58	100
2023-24(CAYm1)	908	45	42	55	99
2024-25(CAY)	911	46	39	55	92

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

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

Items	Budgeted in 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Infrastructure Built-Up	2682	0	1523.95	1523.95	2424.33	2424.33	1997.22	806.72
Library	450	0	375.42	375.42	181.40	181.40	422.30	422.30
Laboratory equipment	361.6	0	261.63	261.63	514.77	514.77	455.48	455.48
Teaching and non-teaching staff salary	17925	289.86	16293	16293	14520	14316.92	11845.96	11806.60
Outreach Programs	0	0	0	0	0	0	0	0
R&D	679	12.49	662.56	662.56	330.71	330.71	311.49	311.49
Training, Placement and Industry linkage	0	0	0	0	0	0	0	0
SDGs	0	0	0	0	0	0	0	0
Entrepreneurship	0	0	0	0	0	0	0	0
Others, specify	11208	125.23	11442.06	10336.21	10542.45	10369.44	8601.5	8522.86
Total	33305.6	427.58	30558.62	29452.77	28513.66	28137.57	23633.95	22325.45

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

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

Items	Budgeted in 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Laboratory equipment	700000	665000	490000	476000	350000	346500	280000	231000
Software	630000	573300	420000	409500	280000	276500	224000	192500
SDGs	70000	56000	56000	52500	56000	52500	42000	42000
Support for faculty development	350000	287000	210000	210000	140000	137200	84000	77000
R & D	280000	276500	168000	164500	168000	159600	168000	161700
Industrial Training, Industry expert, Internship	70000	56000	56000	56000	56000	56000	42000	42000
Miscellaneous Expenses*	0	0	0	0	0	0	0	0
Total	2100000	1913800	1400000	1368500	1050000	1028300	840000	746200