

BHARAT FORGE



CENTER OF EXCELLENCE- INDUSTRY 4.0

SRUJAN

2025-2026

ANNUAL

REPORT



PREPARED BY:

NTTC – DIMAPUR (NAGALAND) &
SIMUSOFT TECHNOLOGIES PUNE (MAHARASHTRA)

PREPARED FOR:

BHARAT FORGE LTD.
PUNE – MAHARASHTRA

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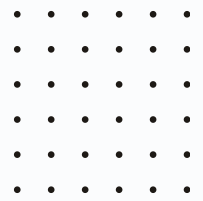
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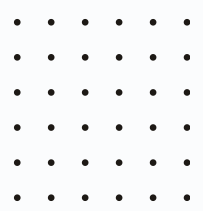
CONCLUSION



The Center of Excellence Industry 4.0 stands as a strategic initiative dedicated to driving innovation, digital transformation, and technological advancement across modern industries. In an era defined by rapid industrial evolution, the Center serves as a hub for integrating cutting-edge technologies such as artificial intelligence, the Internet of Things (IoT), robotics, big data analytics, and cyber-physical systems into traditional manufacturing and business processes.

Over the past year, the Center has played a pivotal role in fostering collaboration between academia, industry partners, and government bodies, enabling the development of future-ready solutions and skillsets. Through targeted research, hands-on training programs, and industry-driven projects, it has empowered organizations and individuals to adapt to the demands of smart manufacturing and digital ecosystems.

The Center of Excellence continues to focus on enhancing operational efficiency, promoting innovation, and building a skilled workforce capable of thriving in the Industry 4.0 landscape. By bridging the gap between theoretical knowledge and practical application, it remains committed to supporting sustainable growth, competitiveness, and technological leadership in an increasingly interconnected world.



The Center of Excellence (CoE) at Nagaland Tool Room & Training Center (NTTC), Dimapur has been established through a joint effort between Bharat Forge Limited, Pune, Simusoft Technologies and NTTC as part of Bharat Forge's CSR initiative. This Center aims to provide cutting-edge technological education and skill development opportunities to students in the North-East region. The CoE comprises advanced Simulation lab and an incubation Center equipped with high-end workstations and equipment, enabling students to transform their innovative ideas into prototypes and market-ready products.

Memorandum of Understanding (MoU) & Inauguration of COE (Industry 4.0)

On 01st October 2024, Bharat Forge Ltd., NTTC, and Simusoft Technologies entered into a Memorandum of Understanding (MoU) to collaboratively establish and strengthen a Center of Excellence (CoE) in Industry 4.0. The initiative is aimed at advancing skill development, fostering innovation, and aligning technical training with the evolving needs of smart manufacturing.

The collaboration leverages the industry expertise of Bharat Forge Ltd., the training infrastructure of NTTC, and the technical specialization of Simusoft Technologies to deliver structured Training programmes and hands-on learning in key Industry 4.0 domains. The CoE will serve as a platform for hands-on learning, industry-relevant training, and technology demonstration, supporting workforce readiness and facilitating the adoption of advanced manufacturing practices.

This partnership is expected to strengthen industry-academia collaboration, enhance employability, and contribute to the broader goal of building a future-ready manufacturing ecosystem.



The Centre of Excellence in Industry 4.0 – “Srujan” was inaugurated on 25 April 2025 at the Nagaland Tool Room & Training Centre (NTTC), Dimapur, by **Dr. Neiphiu Rio**, Hon’ble Chief Minister of Nagaland and **Shri. B.P. Kalyani**, Executive Director of Bharat Forge Ltd. In the presence of **Smt. Hekani Jakhalu**, Hon’ble MLA & Advisor for Industries & Commerce and **Dr. Leena Deshpande**, Associate VP (HR) & Head CSR of Bharat Forge Ltd.

The centre has been established through a collaboration between the Government of Nagaland, Bharat Forge Limited, and SimuSoft Technologies under a CSR initiative. It aims to provide advanced training in Industry 4.0 technologies such as robotics, artificial intelligence, 3D simulation, and automation.

In his address, the Chief Minister described the centre as a major step toward embracing innovation and preparing the youth of Nagaland for the Fourth Industrial Revolution. The facility is expected to train over 500 youths annually, enhance skill development, promote entrepreneurship, and create employment opportunities.

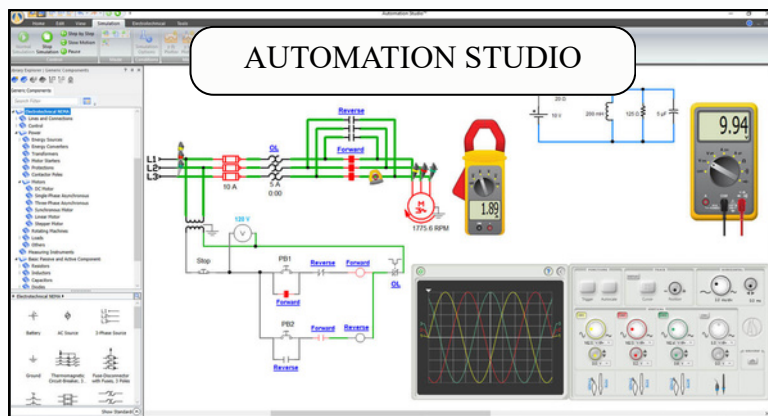
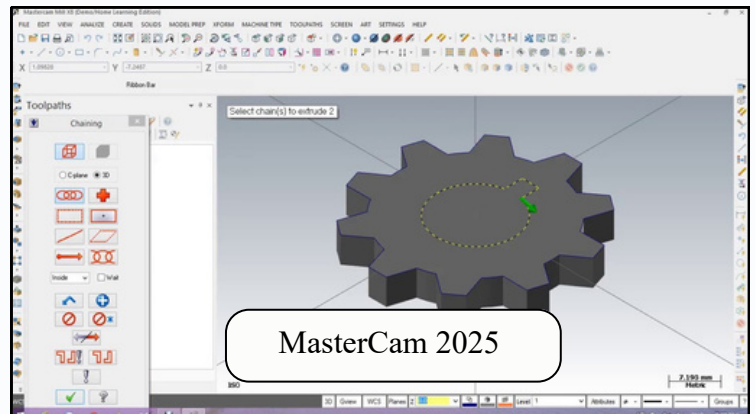
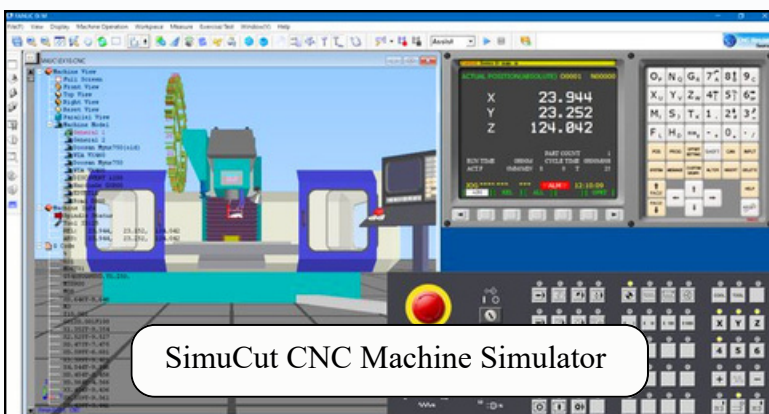
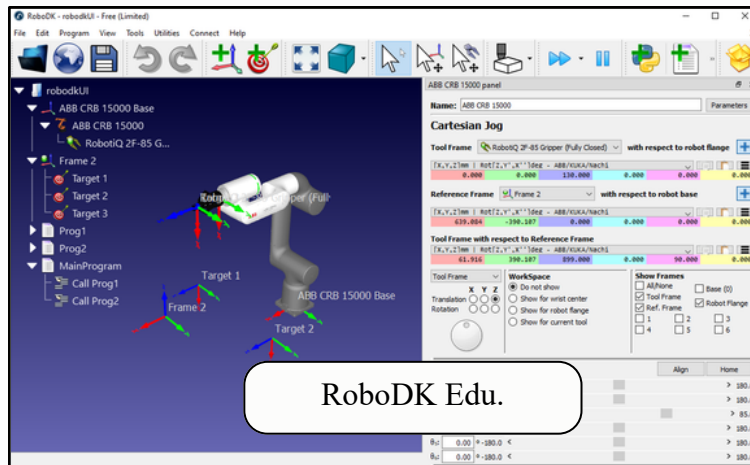
Overall, the inauguration marks a significant milestone in transforming Nagaland into a hub for advanced technological education and industry-ready skills in the Northeast region.



FACILITIES

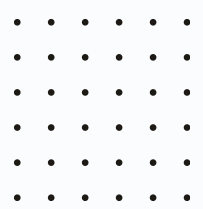
SIMULATION LAB

SL.NO	DESCRIPTION	QUANTITY
1.	ROBODK EDU.	20 Users
2.	AUTOMATION STUDIO	20 Users
3.	SIMUCUT CNC MACHINE SIMULATOR	21 Users
4.	MASTERCAM 2025 SOFTWARE	20 Users



FACILITIES

INCUBATION LAB



SL.NO	DESCRIPTION	QUANTITY
1.	MINI SMART FACTORY SCARA ROBOCELL	1 Unit
2.	PLC & HMI TRAINING KIT (MECHATRONICS LAB)	1 Unit
3.	3D PRINTER MAKE- BAMBU LAB X1E –CARBON COMBO	1 Unit
4.	PROGRAMMABLE DRONE	2 Units



Mini Smart Factory SCARA Robocell



PLC & HMI Training Kit

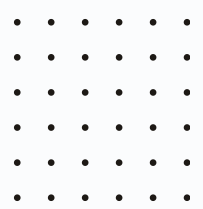


Programmable Drone



3D Printer

CAPACITY BUILDING



The Training of Trainers (ToT) program for a Center of Excellence (CoE) in Industry 4.0 is a structured capacity-building initiative designed to develop expert trainers capable of delivering advanced skills in smart manufacturing and digital industrial technologies.

The training integrates core Industry 4.0 technologies such as Industrial Internet of Things (IIoT), automation systems, robotics, digital twins, artificial intelligence, predictive maintenance, and cyber-physical systems. It combines theoretical foundations with extensive hands-on laboratory experience using industrial-grade equipment and simulation platforms.

The following is a list of trainers, training locations, and dates for the capacity-building programs conducted by Simusoft Technologies.

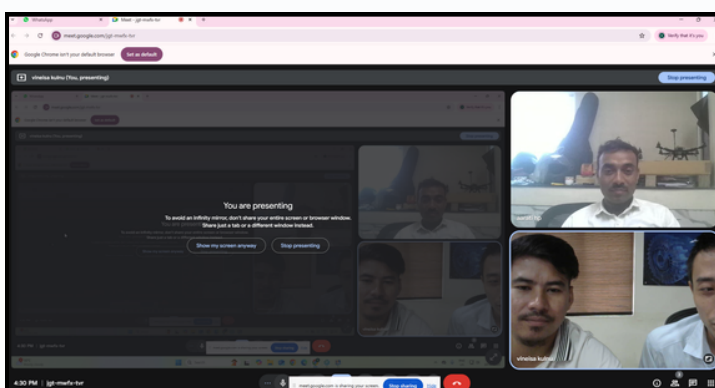
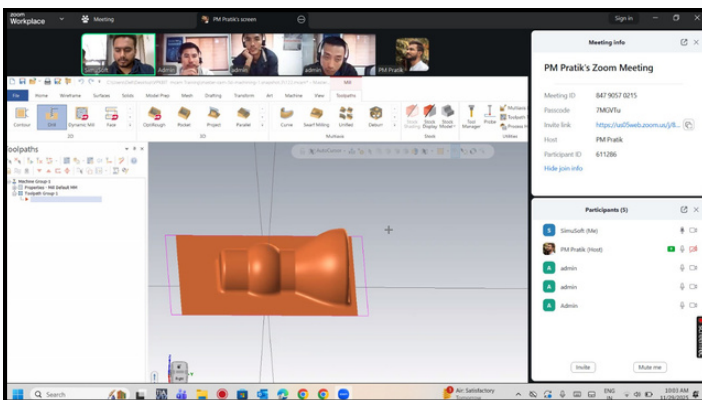
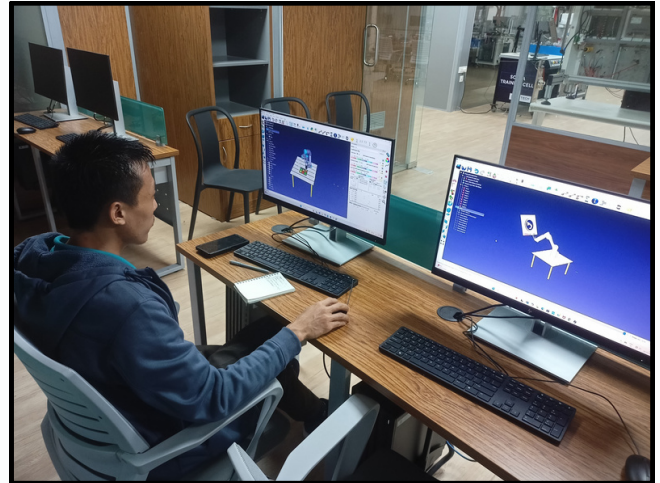
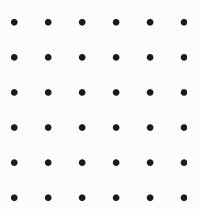
SOFTWARE

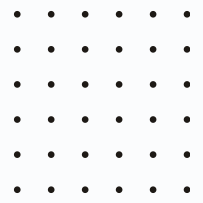
Sl. No.	Description	Training Duration	Trainers	Place
1.	RoboDK Edu-	2 nd - 14 th Dec 2024	Vineisa Kulnu & Thejanikho Sirie	VPKBIET, Baramati, Pune - Maharashtra
2.	SimuCut CNC Machine Simulator			
3.	Automation Studio Edu-			
4.	MasterCam 2025 Software			

HARDWARE

Sl. No.	Description	Training Duration	Trainers	Place
1.	3D Printer Make- Bambu Lab X1E – Carbon Combo	3 rd – 21 st Mar 2025	Vineisa Kulnu & Thejanikho Sirie	Center of Excellence - Industry 4.0 (SRUJAN) NTTC, Dimapur
2.	Mini Smart Factory SCARA Robocell	3 rd – 21 st Mar 2025	Vineisa Kulnu & Thejanikho Sirie	
		6 th – 18 th Oct 2025	Vineisa Kulnu , Thejanikho Sirie, Arjun, Richo, Horiba, Auluin Imchen, Anunbo	
3.	PLC & HMI Training Kit (Mechatronics Lab)	15 th – 25 th Feb 2025	Vineisa Kulnu & Thejanikho Sirie	
		3 rd – 21 st Mar 2025	Vineisa Kulnu & Thejanikho Sirie	
		6 th – 18 th Oct 2025	Vineisa Kulnu , Thejanikho Sirie, Arjun, Richo, Horiba, Auluin Imchen, Anunbo	
4.	Programmable Drones	6 th – 18 th Oct 2025	Vineisa Kulnu , Thejanikho Sirie, Arjun, Richo, Horiba, Auluin Imchen, Anunbo	

CAPACITY BUILDING





The Center of Excellence (Industry 4.0) recorded a steady rise in annual footfall, reflecting its increasing relevance as a hub for advanced technology learning and collaboration. The center attracted a diverse audience, including students, academic professionals, industry representatives, and government stakeholders throughout the year.

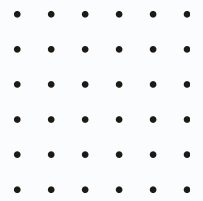
This growth was driven by structured training programs, technical workshops, live demonstrations, and exposure to emerging technologies such as AI, IoT, robotics, and smart manufacturing systems. Academic participation remained dominant, while industry engagement continued to grow through upskilling initiatives and collaborative activities.

Overall, the increasing footfall highlights the CoE's critical role in building future-ready skills, promoting innovation, and strengthening the connection between academia and industry, with strong potential for further expansion in the coming year.

Key Stakeholders

- Students and faculty
- Academic institutions
- Industry partners and companies
- Government and skill development bodies
- Startups and entrepreneurs
- Funding agencies and incubators
- Workforce and end users

SCHOOL/ COLLEGE STUDENTS



School and college visits to the Center of Excellence (Industry 4.0) are designed to create early awareness and understanding of modern industrial technologies among students. These exposure visits provide a structured learning experience where students can observe and interact with advanced systems such as automation setups, robotics, IoT-enabled devices, artificial intelligence applications, and smart manufacturing simulations.

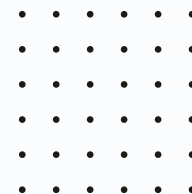
During the visit, students participate in guided tours, live demonstrations, and interactive sessions conducted by technical experts and trainers. These sessions help simplify complex Industry 4.0 concepts and show their real-world applications in manufacturing and engineering sectors.

The program also encourages curiosity, problem-solving thinking, and innovation among young learners. Faculty members accompanying the students gain insights into integrating emerging technologies into academic curricula and practical training.

Overall, these visits play a key role in bridging the gap between classroom learning and industry practices, inspiring students to pursue careers in advanced technology domains and supporting the development of a future-ready workforce.

The following is the list of schools and colleges with number of attendees that have visited the Center of Excellence (Industry 4.0)

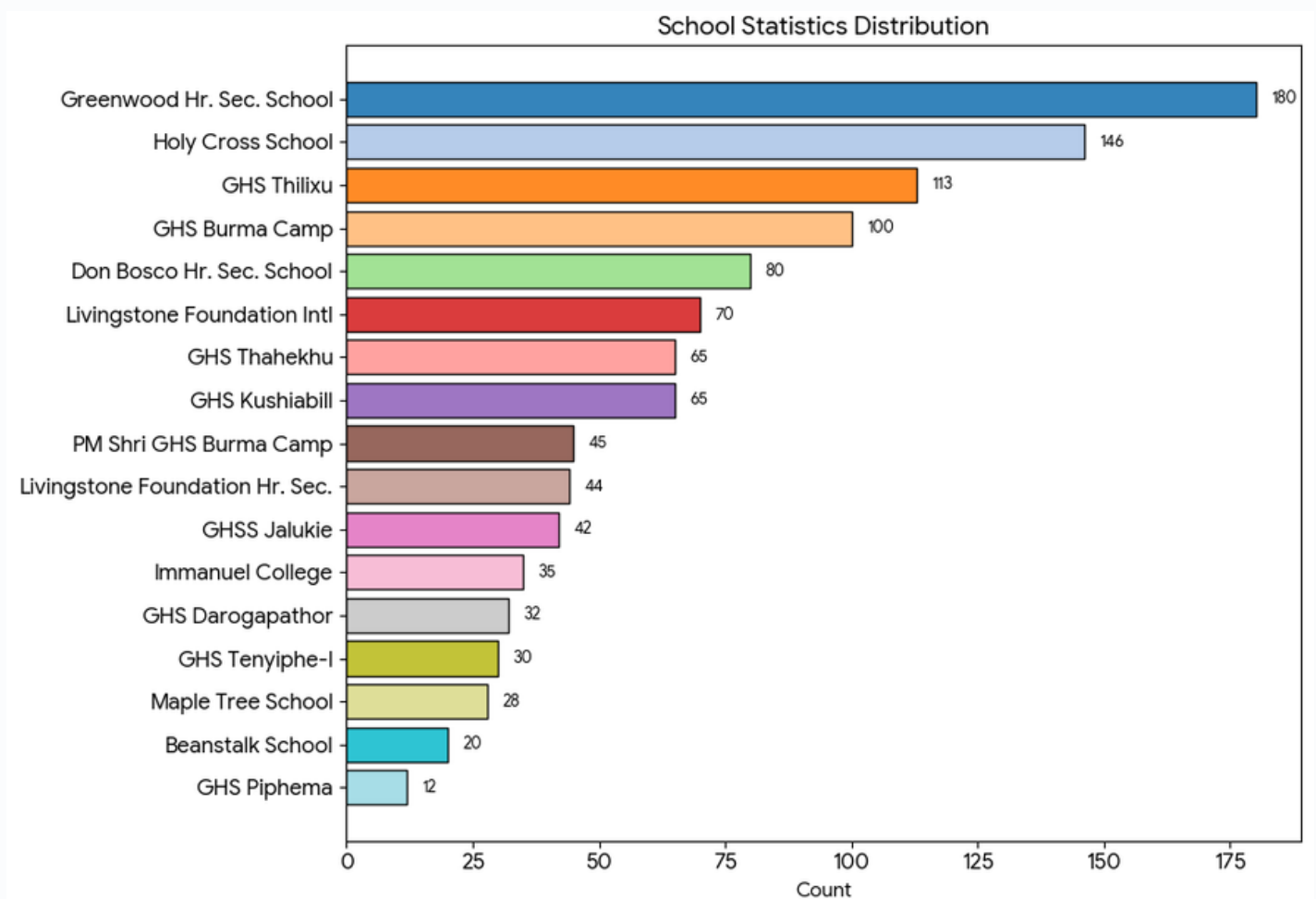
SCHOOL/ COLLEGE STUDENTS



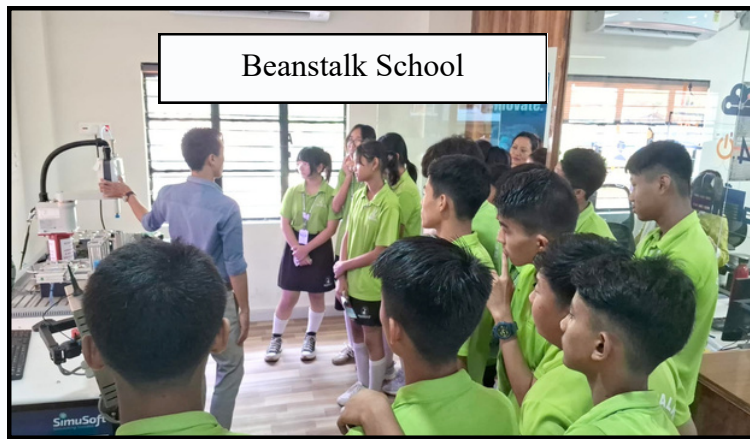
DATE	SCHOOL / INSTITUTE	NO. OF STUDENTS'
12.06.25	Don Bosco Hr. Sec. School	30
12.06.25	Greenwood Hr. Sec. School	180
12.06.25	Livingstone Foundation Hr. Sec. School	44
13.06.25	Don Bosco Hr. Sec. School	50
13.06.25	Beanstalk School	20
20.05.25	GHS Thilixu	113
20.05.25	PM Shri GHS Burma Camp	45
21.05.25	GHS Piphema	12
10.06.25	Holy Cross School	146
10.06.25	Maple Tree School	28
11.06.25	Livingstone Foundation International	70
13.06.25	Immanuel College	35
27.08.25	GHS Thahekhu	30
19.09.25	GHS Burma Camp	100
24.09.25	GHS Darogapathor	32

SCHOOL/ COLLEGE STUDENTS

DATE	SCHOOL / INSTITUTE	NO. OF STUDENTS'
25.09.25	GHS Thahekhu	35
26.09.25	GHS Kushiabill	65
14.10.25	GHS Tenyiphe-I	30
24.10.25	GHSS Jalukie	42
Total Number of students'		1,107



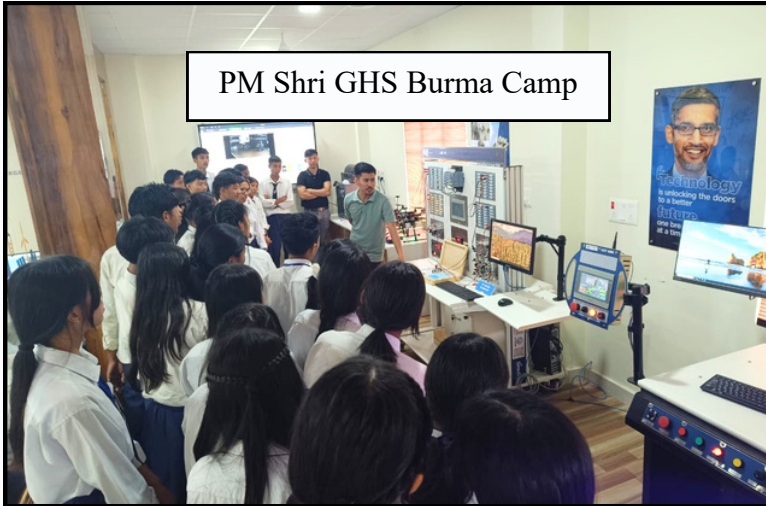
This dataset represents a distribution of **1,107 units** across **17 educational institutions**. Greenwood Hr. Sec. School holds the highest share (180), followed by Holy Cross School (146) and GHS Thilixu (113). The figures range significantly, from a high of 180 to a low of 12 at GHS Piphema. Several institutions, including Don Bosco and GHS Thahekhu, were consolidated from multiple entries to reflect their total aggregate impact.



Beanstalk School



GHS Thilixu



PM Shri GHS Burma Camp



Holy Cross School



GHS Piphema



Maple Tree



Immanuel College



GHS Jalukie

INDUSTRY–ACADEMIA ECOSYSTEM



The Center of Excellence (Industry 4.0) functions as a collaborative ecosystem that brings together academia, industry, and innovation stakeholders to promote skill development and technology adoption.

The ecosystem includes active participation from faculty members, vocational education institutions, and students, who engage in hands-on training and knowledge-sharing activities. It also involves entrepreneurs and startups who contribute to innovation, real-world problem-solving, and technology commercialization.

Regular industrial visits and exposure programs at the CoE further strengthen this ecosystem by enabling direct interaction between learners, educators, and industry experts. These engagements help align academic learning with industry requirements and emerging technological trends.

Overall, the industry–academia ecosystem fosters collaboration, enhances employability, supports innovation, and builds a future-ready workforce for Industry 4.0

Below is the list of beneficiary categories that have visited the Center of Excellence (Industry 4.0).

BENEFICIARY CATEGORY	ORGANIZATION	TOTAL NUMBERS
Teachers/Faculties	Various Institutes	57
Vocational Education	H & A Trainees	91
Entrepreneurs	Various Venture	16
Indirect beneficiaries	Various Department	51
Total Number of Beneficiary		215

INDUSTRY-ACADEMIA ECOSYSTEM



H & A Trainees



NagaEd.



Entrepreneurs



IDAN (NSED)P



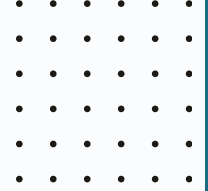
DGC (Professors)



Indirect Beneficiaries



DISTINGUISHED DIGNITARIES



The Center of Excellence (Industry 4.0) has been privileged to host several distinguished dignitaries from academia, industry, and government sectors. Their visits reflect the growing recognition of the CoE as a hub for advanced technology, skill development, and innovation.

During the visits, the dignitaries were briefed on ongoing initiatives, training programs, and industry–academia collaboration activities aimed at strengthening skill development and fostering innovation. Productive discussions were held on expanding partnerships and enhancing the impact of Industry 4.0 technologies in education and industry applications

The visits provided valuable insights and encouragement for further strengthening partnerships and expanding the CoE’s impact in emerging technology domains.

Overall, these visits have significantly contributed to strengthening partnerships, increasing visibility, and positioning the CoE as a key hub for Industry 4.0 advancement and workforce development.

The following is the list of distinguished dignitaries who have visited the Center of Excellence (Industry 4.0).”

DISTINGUISHED DIGNITARIES

NAME	DISIGNATION	ORGANIZATION
Smti. Nirmala Sitharama	Union Finance Minister	Govt. Of India
Dr. Neiphiu Rio	Chief Minister	Govt. of Nagaland
Smti. Hekani Jakhalu	MLA & Advisor	I&C Department
Shri. B.P Kalyani	Executive Director	Bharat Forge Ltd.
Dr. Leena Deshpande	Associate VP & Head CSR	Bharat Forge Ltd.
Dr. B.V.R. Mohan Reddy	Founder Chairman	Cyient Ltd
Shalini Pandit	Joint Secretary	IAS
Shri Sudatta Mandal	Deputy Managing Director	SIDBI
Mr. Yugal Joshi	Programme Director	NITI Aayog
Mr. P. Tokugha Sema	Director & CEO NTTC	Department Of Industries & Commerce
Mr. Arun Kumar Sharma	Director General	Federation of Aviation Industry in India
Er. Vipulhou Lhoungu	Director	Technical Education
Er. Kevin Khezhe	Director	NagaBots Tech Ventures
Mr. Lenkhogin Singson	Service Provider	Bharat Forge Ltd.
Mr. Tushar Gera	Project Manager	Kongokz Infra Pvt. Ltd.
Mr. Pranjal Kalita	HOD Placement	TRTC, Guwahati
Ganesh Gurung	QM	111 Engr. Regt. Rangapahar.
Ayan	Colonel	111 Engr. Regt. Rangapahar.

Dr. Kiran Kumar	Project Head	NEST Cluster
Er. Onongoto Soleho	Chief Mentor	DST Nagaland
Mr. Manoj Kumar Lilhare	Dy. Director	National Productivity Council, Guwahati
Mr. Nahwang Wallim	Technical Expert	Industries & Commerce
Mr. Achim	Representative for India	Jobs in Germany
Mr. T Lemnon Wangsha	Addl. Director	Industries Department
Mr. Mohd. Ashfaq	SPOC	PMKVY, NSDC

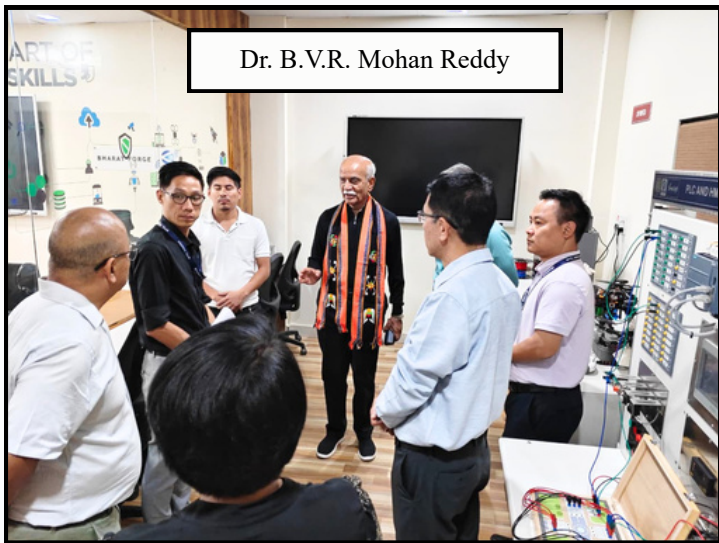




Shalini Pandit



Dr. Leena Deshpande



Dr. B.V.R. Mohan Reddy



Shri Sudatta Mandal



NITI Aayog



Federation of Aviation Industry in India



Mr. Lenkhogin Singson



Mr. P. Tokugha Sema



Technical Education



PMKVY, NSDC



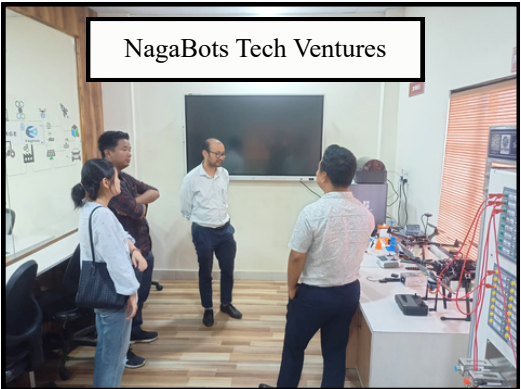
Industries Department



111 Engr. Regt. Rangapahar.



Manoj Kumar Lilhare



NagaBots Tech Ventures

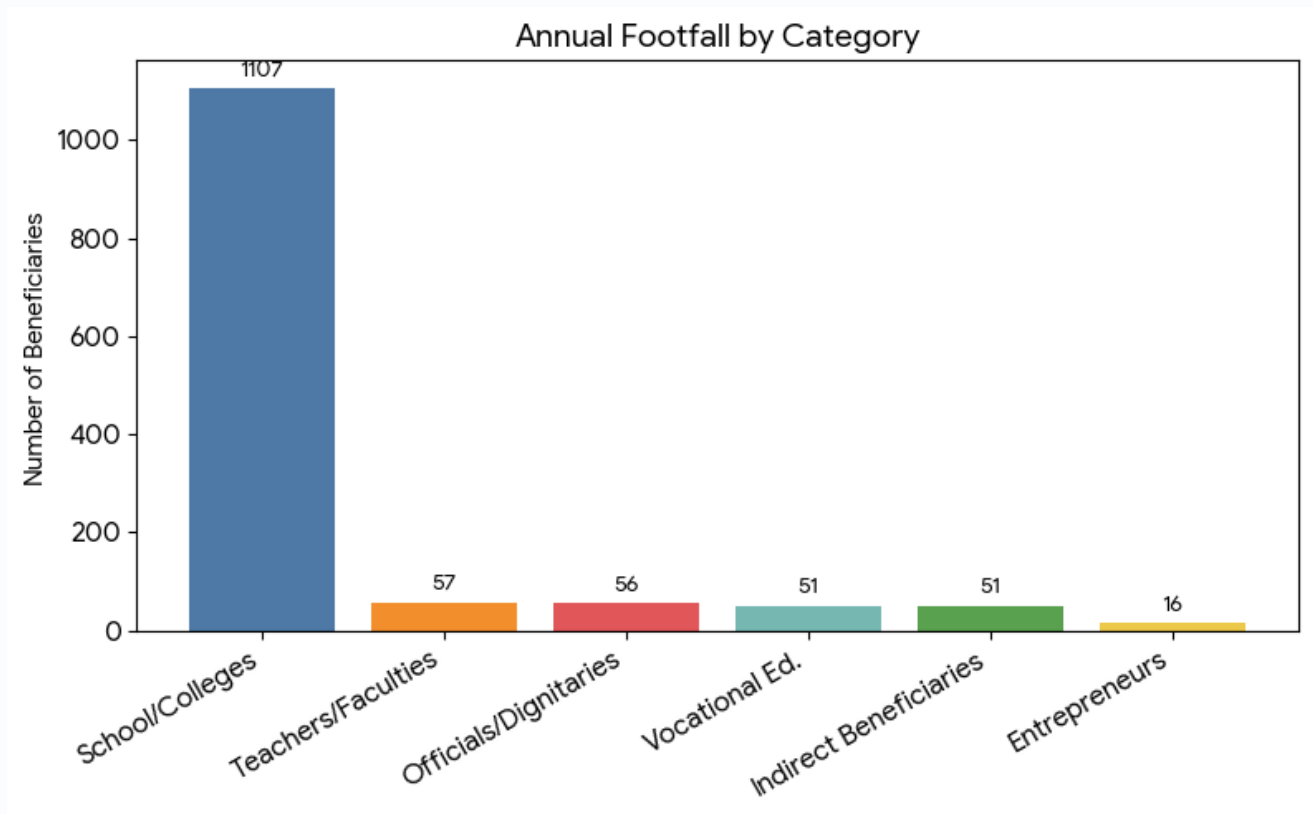


German Officials



DST Nagaland

The outreach program successfully engaged a diverse group of stakeholders, totaling **1,338** individuals. The primary focus remained on academic engagement, complemented by vocational training and entrepreneurial support.



- **Academic Sector (87%):** This is the largest segment, comprising 1,107 students and 57 teachers/faculty members. This high ratio indicates a broad educational reach.
- **Vocational & Skill Development (3.8%):** 51 individuals were enrolled in vocational education, aligning with institutional goals for skill-based training.
- **Leadership & Governance (4.2%):** A total of 56 officials and dignitaries visited or participated, providing necessary oversight and institutional validation.
- **Economic Impact (1.2%):** While the smallest group, the 16 entrepreneurs represent a critical link to industry and economic self-sufficiency.
- **Extended Reach (3.8%):** 51 indirect beneficiaries were also touched by these initiatives.

SL.NO.	INSTITUTE/ ORGANIZATION	COURSE	DURATION	NUMBER OF TRAINEE/BATCH
1.	NTTC, Dimapur	Fundamental of Industrial Robotics and Automation	26 th Feb – 19 th Mar 2025	20 Trainees
2.	NIT, Chumoukedima	Robotic Automation	13 th – 25 th Jun 2025	10 Trainees
3.	Assam Don Bosco University, Guwahati	Electrical & Electro-Technical Simulation	3 rd – 18 th Jul 2025	3 Trainees
4.	Immanuel College , Dimapur	Robotic Automation	14 th – 24 th Jul 2025	3 Trainees
5.	NTTC, Dimapur	Fundamentals of Industrial Simulation & Automation	4 th – 25 th Aug 2025	13 Trainees
6.	Atovi Achumi	Product Life Cycle Management	27 th Nov – 3 rd Dec 2025	1 Trainee
7.	Jobs in Germany (1st Batch)	Fundamentals of Industrial Simulation & Automation	9 th Feb – 27 th Mar 2026	21 Trainees
8.	Diploma (CSE & ME), NTTC	Robotic Automation & Hydraulic - Pneumatic Simulation	23 rd – 27 th Feb 2026	14 Trainees
9.	Vocational Teachers	5 Days Workshop on Industrial Simulation & Automation and 3D Printing Technology	24 th - 28 th Mar 2026	41 Trainees
10.	Vimelino Meru	3D Printing & Modelling / Drone Assembly	7th - 30th Apr 2026	1 Trainee
Total Trainees				127 Trainees

Course Title: FUNDAMENTAL OF INDUSTRIAL ROBOTICS & AUTOMATION
Duration: 26th February – 19th March 2025



Course Title: ROBOTIC AUTOMATION
Duration: 13th June – 25th June 2025



Course Title: ELECTRICAL & ELECTRO-TECHNICAL SIMULATION

Duration: 3rd July – 18th July 2025



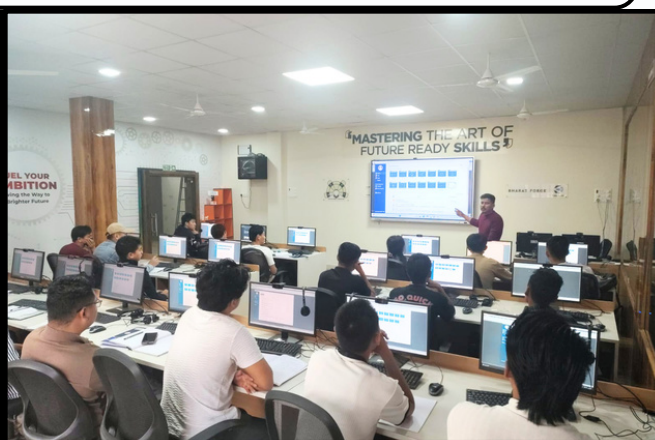
Course Title: ROBOTIC AUTOMATION

Duration: 14th July – 24th July 2025



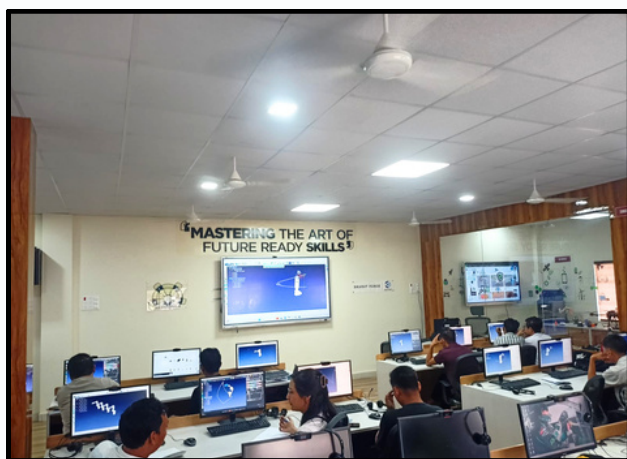
Course Title: FUNDAMENTALS OF INDUSTRIAL SIMULATION & AUTOMATION

Duration: 4th August – 25th August 2025 / Feb - Mar 2026



Course Title: ROBOTIC AUTOMATION & HYDRAULIC - PNEUMATIC SIMULATION

Duration: 23rd – 27th Feb 2026



Course Title: Vocational Training Workshop on Industrial Simulation & Automation and 3D Printing Technology

Duration: 24th -28th Mar 2026

The Center of Excellence for Industry 4.0 has, during the current academic year, demonstrated consistent progress in fulfilling its mandate of promoting advanced technological education, applied research, and industry-oriented skill development.

Through structured training modules, laboratory development, the Centre has contributed to the creation of a robust learning ecosystem. These initiatives have enhanced the technical proficiency, innovation capabilities, and employability prospects of students, while also supporting faculty development and research productivity.

In the forthcoming academic cycle, the Center of Excellence for Industry 4.0 shall continue to focus on capacity building, expansion of infrastructure, strengthening of strategic partnerships, and promotion of research and innovation. Sustained efforts in these areas are expected to further consolidate the Centre's role as a catalyst for academic excellence and a contributor to the development of a skilled and future-ready workforce.