



MINDSPARK

I&C DEPARTMENT | ISSUE 14 | JANUARY – JUNE 2026

“Your Window into Instrumentation &
Control”



Department of
Instrumentation & Control
Government Engineering College, Gandhinagar



FROM THE DESK OF

DR. SWETA P. DAVE

PRINCIPAL

GOVERNMENT ENGINEERING COLLEGE, GANDHINAGAR



DR. SWETA P. DAVE

PRINCIPAL

Government Engineering College, Gandhinagar

It brings me great pleasure to share my thoughts in the Instrumentation and Control Department's newsletter, MindSpark.

Today's high-demanding environment necessitates innovation, which stems from unusual thinking. So, students should follow their academic studies with great determination and enthusiasm.

As the head of this institution, I would like to express my gratitude to the entire team for laying the groundwork for this institute. GEC-Gandhinagar faculties have always done their utmost to nurture students for their overall development. I wish all of the students a bright future, who are nearing the finish of their B.E. journey and will be serving the community.

I hope that this Newsletter provides a platform for students and faculties to express their ideas and accomplishments.

FROM THE DESK OF

PROF. MANISH JANI

COORDINATOR- IC DEPARTMENT

GOVERNMENT ENGINEERING COLLEGE, GANDHINAGAR



PROF. M. R. JANI

COORDINATOR – IC DEPARTMENT

Government Engineering College, Gandhinagar

I am happy to present this edition of Mindspark, the newsletter of the Instrumentation and Control Engineering Department. Our department continues to demonstrate consistent growth through academic excellence, industry collaboration, and active student participation. Collective efforts of all faculties and students have maintained consistent good performance in academics and various activities.

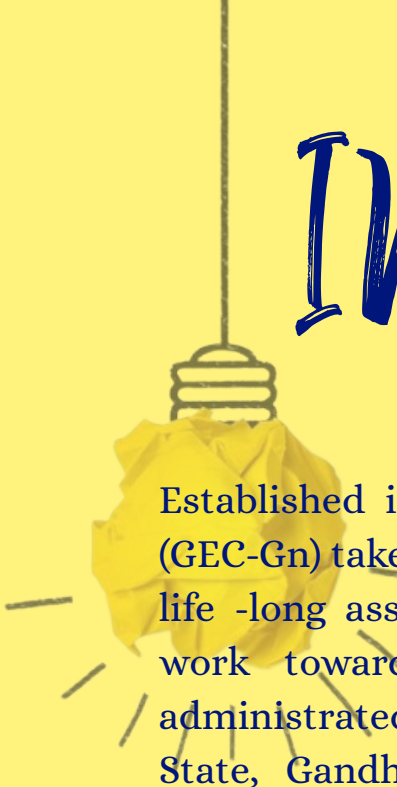
Instrumentation and Control Engineering plays a vital role in automation and intelligent systems. The dedication and commitment shown by both faculty members and students in embracing emerging technologies and addressing real-world challenges are truly commendable.

I appreciate the efforts of the department in nurturing technically competent, ethically responsible, and industry-ready engineers. I extend my best wishes to the entire department for continued success, innovation, and excellence in all future endeavors..

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INSTITUTE



Established in 2004, Government Engineering College, Gandhinagar (GEC-Gn) takes pride in its highly motivated students. Our students are life-long assets that help this institute to continuously evolve and work towards its Vision. Approved by AICTE. The College is administrated by Commissionerate of Technical Education, Gujarat State, Gandhinagar. GEC-Gn is affiliated to Gujarat Technological University. GEC-Gandhinagar offers its students a wide range of courses like Biomedical, Computer, Electronics & Communication, Instrumentation & Control, Information Technology, Robotics & Automation, Electrical Engg, Mechanical Engg, Civil Engineering and Metallurgy.

INSTITUTE VISION

To be a premier engineering institution, imparting quality education for innovative solutions relevant to society and environment.

INSTITUTE MISSION

- To develop human potential to its fullest extent so that intellectual and innovative engineers can emerge in a wide range of professions.
- To advance knowledge and educate students in engineering and other areas of scholarship that will best serve the nation and the world in future.
- To produce quality engineers, entrepreneurs and leaders to meet the present and future needs of society as well as environment.

DEPARTMENT



The Department of Instrumentation and Control Engineering offers B.E. programme at the Under Graduate level since year 2004. Presently department offers undergraduate course, recognized by AICTE (All India Council for Technical Education). The department is equipped with well-developed laboratories to satisfy the course curriculum and fill in the industry institute gap with an aim to produce talented instrumentation and control engineers who cater to meet the technological challenges of industries and society with environmental consideration.

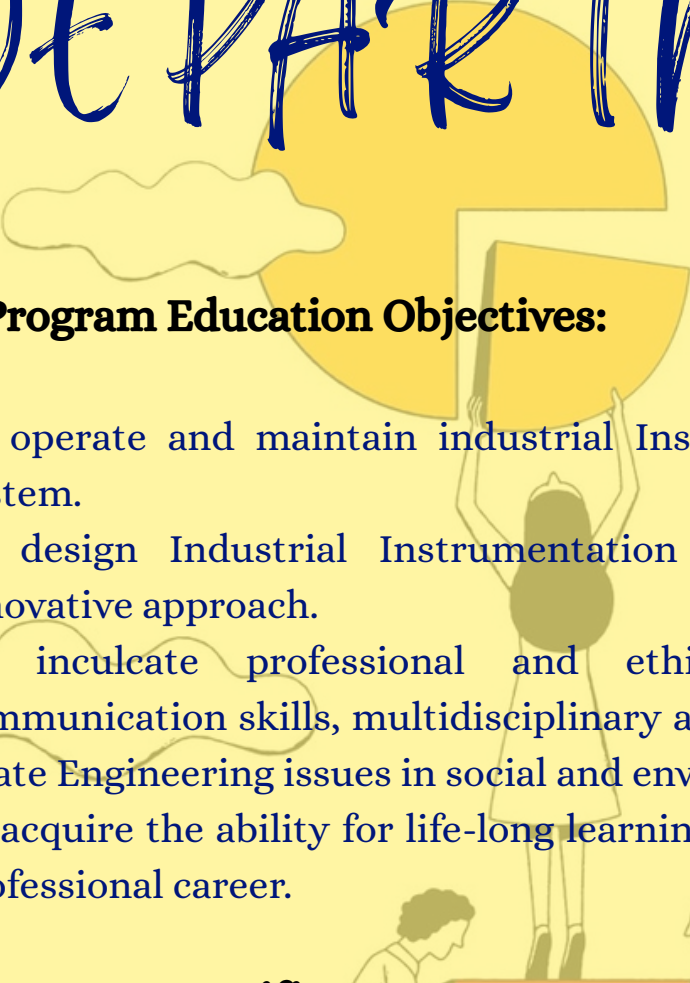
DEPARTMENT VISION

To impart quality education in Instrumentation and Control Engineering through innovation to meet technological challenges of industries and society with environmental consideration.

DEPARTMENT MISSION

- To impart knowledge about present trends in the field of Instrumentation & Control engineering.
- To train competent Instrumentation & Control engineers who can design, operate process instrumentation and also manufacturing an automation systems in industries.
- To encourage students to work on innovative research projects related to Instrumentation & Control engineering considering environmental aspect.

DEPARTMENT

A stylized illustration in the background. At the top, a person stands on a building, holding a large yellow circle above their head. Below them, another person is visible. The building has multiple windows and a blue door. The overall style is simple and graphic.

PEO-Program Education Objectives:

- To operate and maintain industrial Instrumentation & Control system.
- To design Industrial Instrumentation & Control system by innovative approach.
- To inculcate professional and ethical attitude, effective communication skills, multidisciplinary approach and an ability to relate Engineering issues in social and environmental context.
- To acquire the ability for life-long learning needed for a successful professional career.

PSO-Program Specific Outcomes:

- Design and develop solutions for process control and automation industries and able to pursue career in research, industry, higher studies and adapt to changing technology.
- Able to understand professional and ethical responsibility with effective communication skills and life-long learning.

FACULTY DETAILS

PROF. M. R. JANI

Coordinator – IC Department

Qualification: M.E. (IC)

Experience: 30 Years and 6 months



PROF. A. D. RATHOD

Associate Professor

Qualification: M.E. (IC)

Experience: 25 Years and 6 months

DR. R. C. PATEL

Associate Professor

Qualification: Ph.D.

Experience: 24 Years and 6 months





PROF. M. B. HINGU

Assistant Professor

Qualification: M.Tech

Experience: 28 Years and 6 months

PROF. I. U. AJMERI

Assistant Professor

Qualification: M.E. (IC)

Experience: 27 Years and 6 months



DR. K. C. DAVE

Assistant Professor

Qualification: Ph.D.

Experience: 16 Years and 6 months

PROF. K. K. ACHARYA

Assistant Professor

Qualification: M.E. (IC)

Experience: 28 Years and 6 months





DR. K. B. PATHAK

Assistant Professor

Qualification: Ph.D.

Experience: 21 Years and 6 months

PROF. K. S. VASHISHTHA

Assistant Professor

Qualification: M.E. (IC)

Experience: 15 Years and 6 months



PROF. N. V. PATEL

Assistant Professor

Qualification: M.E. (IC)

Experience: 16 Years and 6 months

PROF. P. N. PATEL

Assistant Professor

Qualification: M.E. (IC)

Experience: 11 Years and 6 months





PROF. R. S. RANA

Assistant Professor

Qualification: M.Tech (IC)

Experience: 9 Years and 6 months

PROF. R. L. ZADFIYA

Assistant Professor

Qualification: M.Tech (IC)

Experience: 15 Years and 6 months



DR. A. N. BOKADE

Assistant Professor

Qualification: Ph.D.

Experience: 20 Years and 6 months

PROF. J. J. SHAH

Assistant Professor

Qualification: M.E.

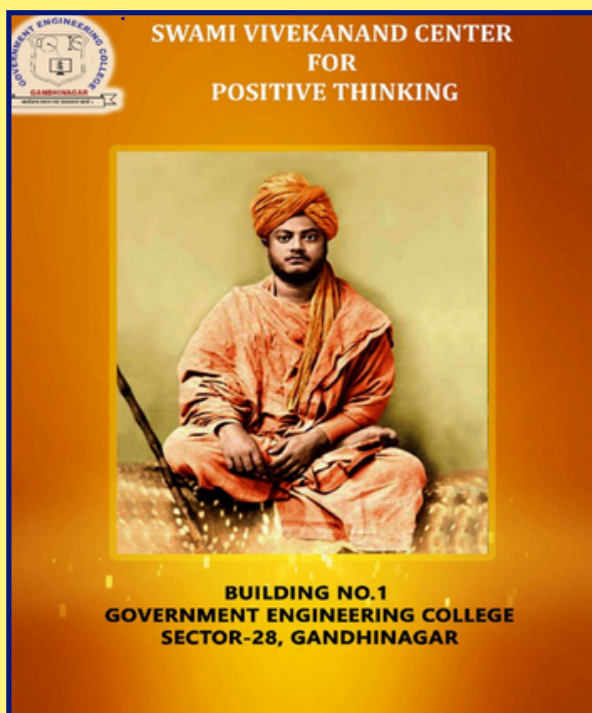
Experience: 9 Years and 6 months



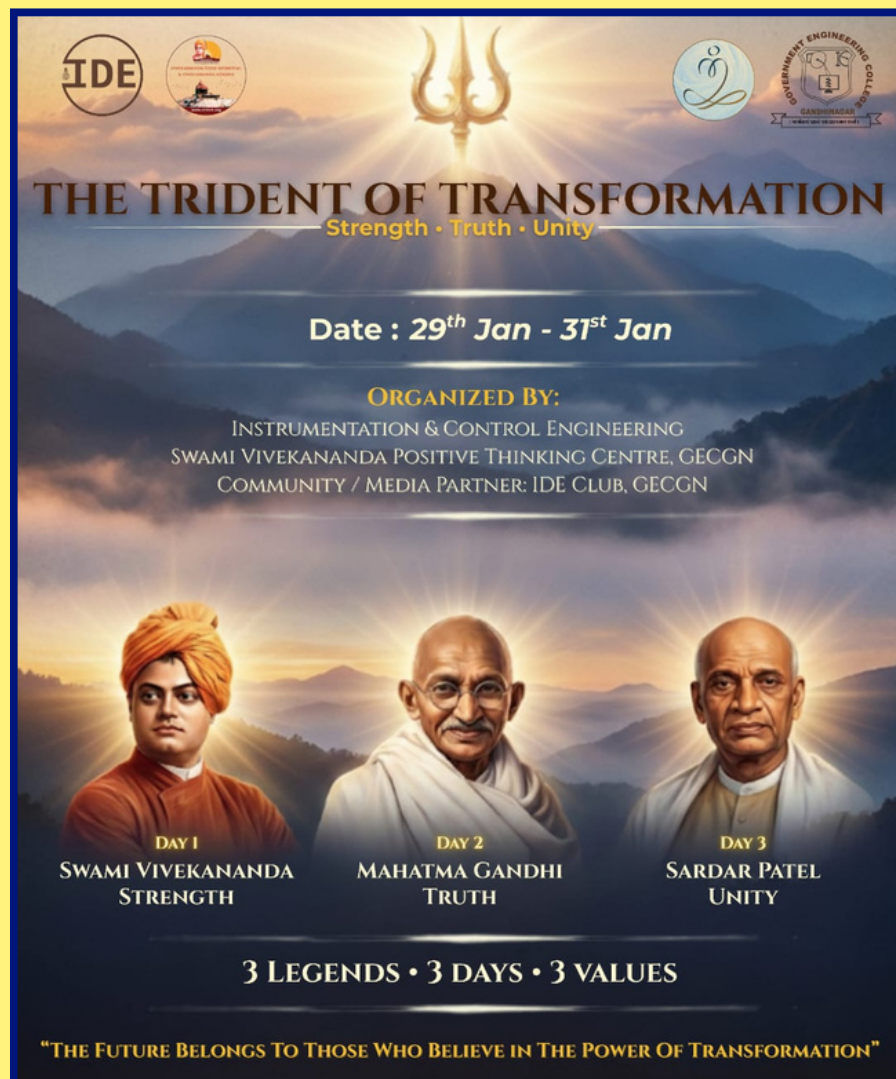
Departmental Activities

Celebration of Rashtriya Yuva Diwas

The Instrumentation and Control Engineering Department celebrated Rashtriya Yuva Diwas on 12th January 2026 to commemorate the birth anniversary of Swami Vivekananda and honor his enduring contributions to youth empowerment and nation-building. Faculty members and students participated enthusiastically in the celebration by sharing inspiring thoughts on Swami Vivekananda's life, philosophy, and timeless messages for the youth. The discussions emphasized the importance of self-confidence, discipline, character building, and the pursuit of knowledge in shaping responsible citizens and future leaders. The event served as a source of inspiration, encouraging students to uphold Swami Vivekananda's ideals and contribute positively to society through dedication, integrity, and continuous learning.



Three-Days Workshop on The Trident of Transformation: Integrating Inner Engineering with Technical Excellence



An institute-level three-day workshop titled "The Trident of Transformation: Integrating Inner Engineering with Technical Excellence" was organized by the I.C. Department from 29th to 31st January 2026. The workshop aimed to promote holistic growth by combining the principles of Inner Engineering with technical and professional excellence, encouraging participants to enhance their personal effectiveness, leadership, and overall well-being.

Expert Talk on India AI Impact Summit 2026

Learnings and Road for Tech education

The I.C. Department actively participated in the online expert session "India AI Impact Summit 2026: Learnings and Road Ahead for Tech Education" on 9th March 2026, organized by the Directorate of Technical Education. Attended by all faculty members and students, the session provided an overview of the key insights and outcomes of the India AI Impact Summit 2026. Eminent experts shared their perspectives on the rapidly evolving landscape of Artificial Intelligence, Machine Learning, Generative AI, data analytics, and intelligent automation, highlighting their growing significance in engineering education and industry. The session emphasized the need to embrace AI-enabled tools and innovative teaching-learning practices to prepare future engineers for emerging technological challenges, inspiring participants to influence AI for academic excellence, research, and innovation. Interactive discussions on emerging AI trends, ethical considerations, and industry expectations encouraged participants to explore the practical applications of AI in engineering. The speakers also stressed the importance of continuous upskilling and interdisciplinary learning to remain competitive in the evolving technological landscape. The session concluded with an engaging question-and-answer segment, providing valuable guidance on AI-driven career opportunities and reinforcing the department's commitment to encourage innovation and technology-oriented learning.



Industry Visit- Visves Advanced Engineering Pvt. Ltd- Ahmedabad.

Prof. K.K.Acharya and Prof. Jheel Shah Coordinated an industrial visit on 30th March 2026



This industrial visit was conducted at Visves Engineering, Ahmedabad, an organization recognized for advanced automation solutions. This industry operates at the intersection of modern technology and industrial processes, specializing in custom automation systems driven by Artificial Intelligence, Machine Learning, IoT, and Robotics. The objective of this visit was to observe the practical implementation of industrial automation, specifically focusing on control panel manufacturing, developing microcontroller-based products and projects, field instrumentation, an idea on PCB designing, and the integration of IoT devices etc.



Industry-Institute Interaction between Axis Solutions Ltd. and I.C. Department, GECGn

The Instrumentation and Control Engineering Department, Government Engineering College (GEC), Gandhinagar, welcomed Mr. Sanjeev Chakraborty , Fellow and Chartered Engineer from Axis Solutions Ltd. on 7th March 2026 for a discussion on the proposed Centre of Excellence (CoE) in the department.

During the visit, Mr. Chakraborty visited the department's laboratories and interacted with the faculty members to understand the existing infrastructure and technical capabilities. He shared valuable insights on the development of the Centre of Excellence, highlighting opportunities for industry-academia collaboration, advanced laboratory facilities, student skill development, and industry-oriented training. The visit marked an important step towards establishing a Centre of Excellence that will enhance practical learning and strengthen collaboration between the department and industry.



Alumni Meet 2026 - I.C. Department



I.C. Department organized an Alumni Meet for the alumni of the I.C. Department on 4th April 2026. Prof. M. R. Jani welcomed the gathering and addressed the attendees, emphasizing the significance of strengthening the bond between the department and its alumni. The program included expert talks by two distinguished alumni of the I.C. Department. Mr. Ananya Kothari delivered an informative session on "Real Industry Experience at Axis Solutions," where he shared his professional experiences and practical insights from the industry. Ms. Devanshi Gosai presented an engaging talk on "Insights into Engineering in Industry," offering valuable guidance on industrial practices and career development.

The Alumni Meet provided an excellent opportunity for alumni, students, and faculty members to interact, exchange ideas, and strengthen their professional network.



An expert talk on Roles and Responsibilities of an IC Engineer in Industries

Training and placement cell , I.C. Dept. organized an expert talk on Roles and Responsibilities of an IC Engineer in Industry on 4th April, 2026. The session was delivered by Ms. Malvika Nishad, Proposal Engineer at Axis Solutions Limited. The expert talk was highly informative and beneficial for students. It successfully provided practical insights into industrial roles, helping students align their academic learning with professional expectations.



Industrial Visit & CoE Discussion

An industrial visit along with a Center of Excellence (CoE) discussion was organized at Axis Solutions Ltd. (ASL) on 28th April 2026 to provide practical exposure and strengthen industry-academia collaboration by I.C. department. Total 28 students and 4 faculty members Prof. M.R. Jani, Prof. K.C. Dave, Prof. K.S. Vashishtha and Prof. A.N. Bokade attended the visit.

This visit provided students with valuable practical exposure to real-time industrial operations and advanced instrumentation systems. The visit began with a tour of the shopfloor, where students observed the manufacturing processes and explored various products under Axis brands such as Amsion (Gas Analysis Components), Baspa (Steam and Water Analysis Components), Typhoon (Pressure Regulators), and Snowind (Thermal Components). In addition, students were introduced to automation and instrumentation systems, including water sensors and analyzers. Key industrial setups such as the Sample Handling System, SWAS (Steam and Water Analysis System), HVAC systems, and Integrated Analyzer Shelter were demonstrated. It helped students understand the practical implementation of theoretical concepts, industrial safety practices, and the working of sophisticated monitoring and control systems.



The CoE discussion further added value by fostering meaningful industry-academia interaction. The exchange of ideas, suggestions, and expert guidance from both sides laid a strong foundation for future collaboration and development of a robust Center of Excellence.

A poster presentation on Industrial Safety on 21st April-2026

GOVERNMENT ENGINEERING COLLEGE, GANDHINAGAR
INSTRUMENTATION & CONTROL DEPARTMENT



**POSTER PRESENTATION ON
RECENT TRENDS IN INDUSTRIAL SAFETY**

Venue
Block 2, IC Department

Date & Time
**21st APRIL, 2026,
10:30 AM onwards**

Registration QR Code





Prof. M.R. Jani
Coordinator -IC
GEC, Gandhinagar



Dr. S.P. Dave
Principal
GEC, Gandhinagar

**Open to all
Engineering branch**

Prof. R. L. Zadfiya (IC Department)
Prof. K. K. Acharya (IC Department)
Prof. M.R. Jani (IC Department)
Faculty Coordinators

1. Introduction: The Evolution of Industrial Safety

The transition from reactive to proactive safety measures marks the fourth Industrial Revolution (Industry 4.0). Modern safety systems no longer just respond to accidents; they predict and prevent them through integrated, data-driven frameworks.

2. AI and Predictive Analytics in Industrial Safety

Artificial Intelligence (AI) has shifted the safety paradigm from "fail-safe" to "predict-safe."

- **Predictive Maintenance:** Using Machine Learning (ML) to monitor equipment health and predict failures before they lead to hazardous releases.
- **Anomaly Detection:** AI algorithms analyze historical sensor data to identify patterns that preceded past incidents, providing early warning signs.
- **Risk Modeling:** Dynamic risk assessment models that update in real-time based on environmental variables.

3. Fire and Gas Detection Systems (FGS)

Modern FGS are the first line of defense in high-risk environments like oil rigs and chemical plants.

Optical Flame Detectors: Utilizing UV/IR sensors to identify fires with high speed and accuracy.

Ultrasonic Gas Leak Detection: Detecting the sound of high-pressure leaks, which is effective even in windy outdoor conditions where traditional "point" sensors might fail.

4. Real-Time Hazard Detection Systems

These systems provide continuous monitoring of the industrial environment.

Computer Vision: Using existing CCTV feeds coupled with AI to detect smoke, unauthorized personnel in restricted zones, or workers not wearing PPE.

Sensor Fusion: Combining data from thermal imagers, gas sensors, and acoustic sensors to create a "digital twin" of site safety

5. Industrial Safety Instrumentation and Smart Systems

Safety Instrumentation Systems (SIS) are engineered to take a process to a "safe state" when predetermined conditions are violated.

Smart Safety Instruments: These include "intelligent" valves and transmitters that perform self-diagnostics. They can report if their own sensors are degrading, ensuring the safety loop is always functional.

Digital Integration: Moving from traditional analog loops to digital protocols (like HART or Foundation Fieldbus) for better data granularity.

6. Layer of Protection Analysis (LOPA)

LOPA is a semi-quantitative tool used to analyze the risk of a process deviation and the adequacy of existing safeguards.

The "Swiss Cheese" Model: Understanding how multiple independent protection layers (IPLs) prevent a single point of failure.

Risk Reduction Factors (RRF): Calculating the effectiveness of each layer to ensure the residual risk is "As Low As Reasonably Practicable" (ALARP).

7. Smart Wearables and the Future of Worker Safety

Wearables represent the "human" element of the smart factory.

Biometric Monitoring: Smart helmets or vests that track heart rate, body temperature, and fatigue levels to prevent heat exhaustion or overexertion.

Geofencing: GPS-enabled wearables that alert a worker (and the control room) if they enter a high-risk zone.

Exoskeletons: Wearable robotic suits that reduce physical strain during heavy lifting, preventing long-term musculoskeletal injuries.

8. Recent Trends in Industrial Safety

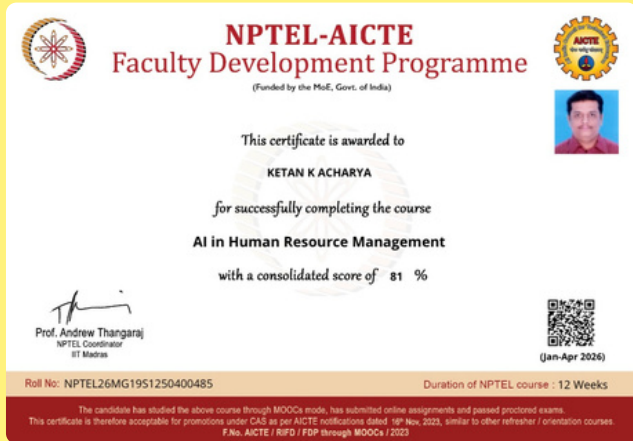
Digital Twins: Creating a virtual replica of a plant to simulate emergency drills and test safety protocols without real-world risk.

Edge : Processing safety data locally on the device (rather than the cloud) to reduce latency in emergency shut-down decisions.

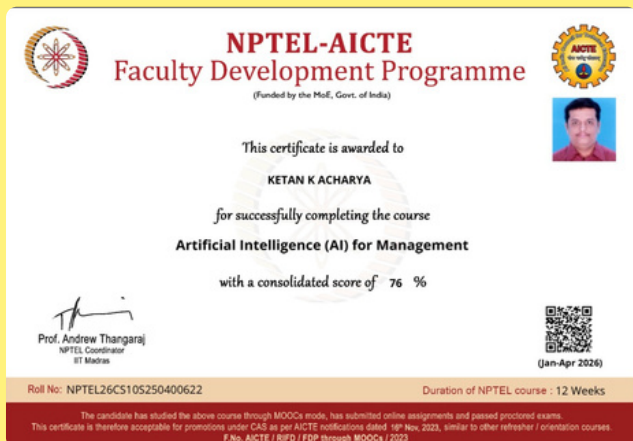
The Connected Worker: A holistic approach where every worker is digitally linked to the plant's safety management system

Faculty Achievements

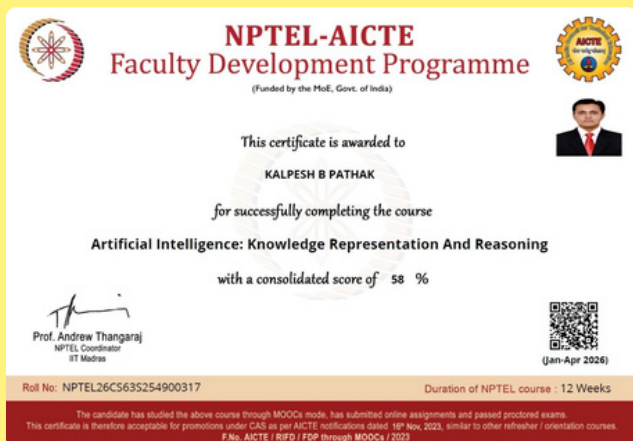
PARTICIPATION IN STTP/SEMINAR/WORKSHOP



Prof. K.K.Acharya successfully completed an FDP on 'AI in Human Resource Management' on the NPTEL platform during Jan-April 2026-MOOC FDP

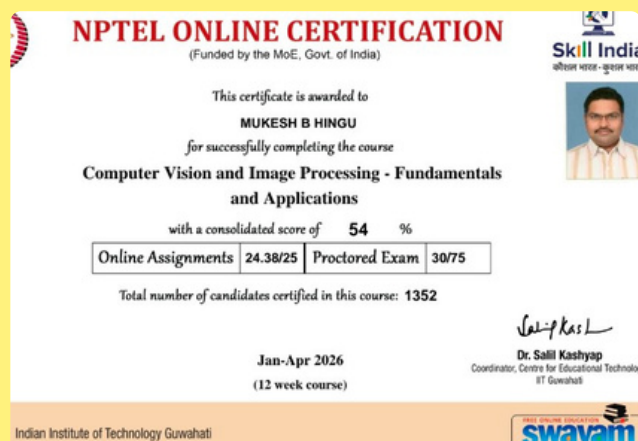


Prof. K.K.Acharya successfully completed an FDP on 'AI in Management' on the NPTEL platform during Jan-April 2026-MOOC FDP



Prof. K.B.Pathak successfully completed an FDP on 'Artificial Intelligence: Knowledge Representation and Reasoning' on the NPTEL platform during Jan-April 2026-MOOC -FDP

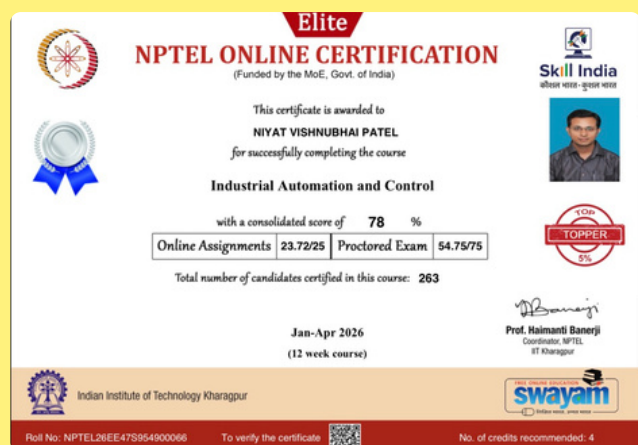
Prof.M.B.Hingu successfully completed an FDP on ‘Computer Vision and Image Processing-Fundamentals and Applications’ on the NPTEL platform during Jan-April 2026-MOOC FDP



Prof.M.B.Hingu successfully completed an FDP on ‘Industrial Automation and Control’ on the NPTEL platform during Jan-April 2026-MOOC FDP



Prof.N.V.Patel successfully completed an FDP on ‘Industrial Automation and Control’ on the NPTEL platform during Jan-April 2026-MOOC FDP



Prof.M.B.Hingu has attended various online webinars under the initiative TEERTH organized by Knowledge Consortium of Gujarat, Education Department, Government of Gujarat.



Prof. P. N. Patel and Mr. Sahil Ambawani, a student of the Instrumentation & Control Engineering Department, represented Government Engineering College, Gandhinagar, at the All India Technical Conference 2025: "Beyond Aryabhata to Infinite Space", organized by the Indian Space Research Organisation to commemorate the Golden Jubilee of the launch of Aryabhata. The conference was hosted by the U R Rao Satellite Centre, Bengaluru, with the objective of promoting awareness about India's space programme and encouraging undergraduate, postgraduate students, and research scholars from universities and technical institutes across the country to contribute through technical papers written in simple and comprehensible Hindi.



Pedagogy Conducted By Faculties

Prof.M.R.Jani conducted a Pedagogy on **Quantum Physics and Quantum Computing** on 2nd May 2026



Pedagogy on *Entrepreneurship Development for the Space Sector* – Dr. K. B. Pathak (21/02/2026)



Pedagogy on *Quantum Computing Foundations to Future Avenues* – Dr. R. C. Patel (21/02/26)



Pedagogy on ***NBA 2.0 Evaluation Guidelines*** -Prof. K.
S. Vashishtha (06-05-2026)



Student Achievements & Participation

Students and faculties participated in
“Gujarat SemiConnect Conference 2026” at Mahatma Mandir on 1st
March 2026



We are proud to congratulate Sahil Ambwani for successfully qualifying the GATE examination. This remarkable achievement reflects their dedication, perseverance, and academic excellence. We wish them continued success in all their future endeavors.

GRADUATE APTITUDE TEST IN ENGINEERING 2026
अभियांत्रिकी स्नातक अभिक्षमता परीक्षा 2026

Your GATE 2026 Result [IN]

Name

SAHIL RAMPRAKASH AMBWANI

Registration Number

IN26S12012302

Gender

Male

Parent's/Guardian's name

HITESH RAMPRAKASH AMBWANI

Date of Birth (YYYY-MM-DD)

2003-08-13

Test Paper

Instrumentation Engineering (IN)

Marks out of 100[#]

40.33

Qualifying Marks^{##}

39.8

35.8

26.5

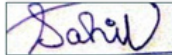
General

OBC-NCL/EWS

SC/ST/PwD



Photograph



Signature

30

SPORTS WEEK



Students from the Instrumentation & Control Engineering Department participated in Sports Week 2026 (Jenish Tandel and Adithya Nair) were part of the winning teams in Football and Kabaddi. Their achievement reflects the department's spirit of teamwork, determination, and excellence beyond academics.



Article By Industry Expert

Axis Solutions Limited — Engineering Innovation, Enabling Industry, Empowering Future Engineers

Introduction

India's industrial growth story is closely linked with organizations that have consistently built engineering capability, technology depth and execution excellence. One such organization is Axis Solutions Limited, now a BSE-listed engineering and technology company that has evolved over the past two and a half decades into a multi-domain player in process automation, infrastructure automation, analytical systems and industrial digitalization.

From its humble beginnings in 1999, Axis has grown into a trusted partner for heavy industries, EPC companies and infrastructure developers — delivering end-to-end lifecycle solutions spanning R&D, manufacturing, system integration, distribution of global technologies and long-term performance services.

Today, Axis operates across India and supplies solutions to customers in more than 20 countries, supported by multiple engineering and service offices in India and overseas.

Evolution Journey — From Instrumentation Specialist to Integrated Engineering Enterprise

Axis started with a focused vision — to support Indian industries with high-quality Gas and

Liquid Integrated Analyzer Systems mainly focusing on CEMS and SWAS applications.

In the early years, the company built strong credibility by supplying and integrating instrumentation systems in sectors such as:

- Oil & Gas and Refineries (complying to Hazardous area approvals)
- Power Generation
- Steel and Metals
- Cement
- Chemicals and Fertilizers
- Water and Infrastructure

Recognizing the need for deeper customer value, Axis steadily expanded from product supply to engineering ownership.

This strategic transition enabled the company to develop capabilities in:

- **Turnkey analytical package solutions with in-house Analyzer house**
- **Hazardous area engineering**
- **Automation connectivity and IIoT integration**
- **Electrical and thermal infrastructure solutions with in-house Industrial HVAC**
- **System lifecycle maintenance services**

With sustained growth, professional governance and market trust, Axis achieved a major milestone by becoming a public listed company, strengthening its ability to invest in technology, talent and global expansion.

Integrated Capability Model — R&D, Manufacturing, Engineering and Partnerships

One of the defining strengths of Axis Solutions Limited is its integrated business architecture, combining multiple engineering competencies under one platform.

DSIR-Approved Research & Development Center

Axis operates dedicated R&D initiatives recognized by India's Department of Scientific and Industrial Research (DSIR). These programs focus on developing:

- Industrial sensing technologies
- Sampling and analytical conditioning solutions
- Thermal management systems
- Industrial IoT platforms
- AI/ML-enabled performance analytics

The R&D philosophy at Axis emphasizes practical industrial relevance, ensuring innovations are robust enough for harsh plant environments.

Manufacturing Excellence

Axis manufactures a wide range of engineering products through specialized technology brands, including:

- Gas and liquid analyzer components
- Sample conditioning systems
- Industrial pressure regulation systems
- Panel cooling and thermal management solutions
- Industrial enclosures and electronic integration products
- Instrumentation measurement devices

These products are designed to meet demanding requirements such as:

- Explosion-proof safety standards
- High reliability in extreme climates
- Low lifecycle maintenance
- Compliance with global industrial certifications

Global Technology Partnerships

In addition to indigenous innovation, Axis represents leading international technology providers, enabling Indian customers to access world-class measurement and analytical systems.

These collaborations strengthen Axis' ability to deliver hybrid solutions combining global technology with local engineering expertise.

System Integration & Package Solutions Leadership

Axis Solutions is widely recognized for its strength in engineering package solutions, particularly in analytical and automation domains.

Examples include:

- Continuous Emission Monitoring Systems (CEMS)
- Gas Analyzer Shelters and E-Houses
- Water quality monitoring packages
- Industrial energy monitoring platforms
- Sampling and conditioning systems for process analyzers

Such solutions are delivered on a turnkey basis, covering:

- Design and engineering
- Procurement
- Manufacturing and assembly
- Factory testing
- Site commissioning
- Long-term AMC and performance services

This lifecycle ownership model provides customers with single-point accountability and operational assurance.

Industrial Digitalization — AI/ML Enabled IIoT Platforms

As industries transition towards Industry 4.0, Axis has actively invested in Industrial IoT and data analytics platforms.

These solutions enable:

- Real-time equipment performance monitoring
- Energy optimization
- Pump and rotating equipment efficiency analytics
- Remote analyzer diagnostics
- Predictive maintenance insights
-

By combining sensor data, edge gateways and cloud dashboards, Axis helps plants achieve:

- Reduced downtime
- Improved process efficiency
- Faster return on investment
- Sustainability and compliance readiness

Students studying automation and data science can observe how AI and engineering domain knowledge must work together to deliver industrial impact.

Specialized Expertise in Gas and Liquid Analyzer Systems

Axis has built strong domain competence in analytical measurement systems — a critical requirement for modern process industries.

Gas Analyzer Solutions

Gas analyzer packages help industries:

- Monitor emissions
- Optimize combustion
- Ensure safety in hazardous environments
- Maintain product quality

Axis solutions in this domain include:

- Sample extraction probes
- Heated and cooled sampling lines
- Gas conditioning panels
- Analyzer shelters
- Digital monitoring dashboards

These systems are essential in sectors such as refineries, power plants, hydrogen production facilities and steel processing units.

Liquid Analyzer Solutions

Water and process liquid quality monitoring is another focus area.

Applications include:

- Boiler chemistry monitoring
- Effluent compliance
- Mining slurry density measurement
- Chemical concentration analysis

Axis' innovations such as non-nucleonic density measurement technologies demonstrate how safer alternatives can replace traditional radioactive measurement methods.

Commitment to Sustainability and Compliance

Heavy industries face increasing regulatory pressure related to:

- Emission monitoring
- Water usage tracking
- Energy efficiency
- Hazardous area safety

Axis plays a critical enabling role by delivering compliance-ready engineering solutions aligned with national and global standards.

The company's work in environmental monitoring, energy management and process optimization directly contributes to:

- Lower industrial carbon footprint
- Improved resource utilization
- Safer plant operations

Global Footprint and Market Presence

Axis Solutions has successfully executed projects across India and has supplied engineered solutions to customers in more than 20 international markets.

Its operational presence includes:

- Multiple regional offices in India
- Engineering support centers
- Overseas business engagements
- Global distributor networks

This exposure provides Axis engineers with valuable experience in handling diverse plant standards, climatic conditions and regulatory frameworks.

Brand Ecosystem Strategy

To manage its diverse activities, Axis has developed a structured multi-brand approach.

Axis Solutions – System integration and turnkey project delivery

Axociate – Global and domestic distribution ecosystem

Axculture – Representation of international technology brands

Axcellerator – Promotion of new indigenous innovations

Additionally, specialized manufacturing brands support focused product positioning in analytical instrumentation, thermal management and automation hardware.

This architecture enables clarity in market communication while maintaining the strength of the **Axis parent identity**.

Titans of Technology

The “Titans of Technology” theme reflects Axis Solutions Limited’s strong positioning as a technology-driven engineering organization operating at the cutting edge of industrial automation, analytical instrumentation and infrastructure solutions. It symbolizes Axis’ capability to design and deliver advanced solutions in demanding environments such as refineries, power plants, mining operations and large infrastructure facilities. Through continuous investment in R&D, indigenous manufacturing, digitalization platforms and global technology partnerships, Axis has established itself as a trusted technology leader enabling industries to improve efficiency, safety, and sustainability and compliance readiness. The theme highlights Axis engineers as technology champions who solve complex industrial challenges with innovation, precision and lifecycle ownership.

The “Vow to Wow” theme represents the deeply embedded customer-centric culture at Axis Solutions Limited. It reflects the organization’s commitment to go beyond

contractual delivery and consistently delight customers through competence, responsiveness and solution ownership.

At Axis, engineers take a personal vow to transform every customer engagement into a “Wow” experience — whether through faster project execution, reliable system performance, proactive service support or value-driven innovation.

This philosophy drives strong long-term relationships with EPC companies and industrial

end-users, positioning Axis not just as a supplier, but as a trusted performance partner.

Industry–Academia Collaboration — Center of Excellence at GEC Gandhinagar

Axis Solutions Limited has entered into a strategic collaboration with Government Engineering College, Gandhinagar to establish a Center of Excellence (CoE) in Instrumentation, Analytical Systems and Industrial Automation.

Key objectives of this initiative include:

- Hands-on training infrastructure for students
- Exposure to real industrial analyzers and IoT platforms
- Internship opportunities in engineering projects
- Faculty development workshops
- Joint innovation and research activities

Such partnerships aim to bridge the gap between classroom learning and industrial readiness, helping students develop practical competencies demanded by modern industries.

Leadership Spotlight — Sanjeev Chakraborty

A key contributor to Axis’ growth strategy is Mr. Sanjeev Chakraborty, Chief Growth Officer.

He leads:

- Marketing and brand strategy
- Business development initiatives
- Market expansion planning
- Strategic partnerships

With over three decades of experience in instrumentation and automation engineering, he is

also the author of the professional development book:

“A Practical Guide to Become Good to Great as IC Engineer.”

The book is widely appreciated for offering structured guidance to engineers on transitioning

from technical contributors to professional leaders, covering aspects such as:

- Application understanding
- Communication with stakeholders
- Solution selling mindset
- Career growth planning

His engagement with academic institutions reflects a strong belief that future industrial leadership must be nurtured early through mentorship and exposure.

Learning Opportunities for Engineering Students

Students aspiring to build careers in process industries can gain valuable insights from Axis’

domains of work:

- Analytical instrumentation engineering
- Hazardous area system design
- Industrial IoT architecture
- Data analytics for equipment performance
- Turnkey project management
- Lifecycle service engineering

The industry increasingly requires engineers who can combine:

Core engineering fundamentals + digital technology + practical field exposure.

Axis’ initiatives with academic institutions aim to prepare students for precisely this evolving requirement.

Conclusion

Axis Solutions Limited represents an inspiring example of how an Indian engineering organization can evolve through:

- Technological innovation
- Market adaptability
- Global collaboration
- Commitment to skill development

From a field instrumentation specialist in 1999 to a multi-domain public listed engineering enterprise, Axis continues to contribute to industrial productivity, environmental responsibility and engineering education.

For students at Government Engineering College Gandhinagar, this partnership opens doors to real-world learning, industry exposure and future career pathways in advanced automation and analytical engineering.

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