

◆ Empowering the Future

INFORMATION BROCHURE

Instrumentation Automation Surveillance Communication
Sector Skill Council

IASC
SECTOR SKILL COUNCIL

एक कदम आत्मनिर्भरता की ओर





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IASC SECTOR OVERVIEW

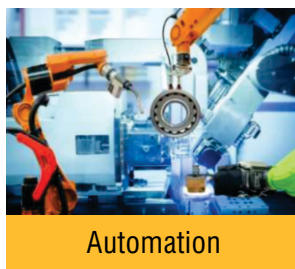
ROLE IN INDIA AND MARKET SIZE

The industrial automation and instrumentation market in India is projected to grow from USD 13.82 billion in 2020 to USD 25.2 billion by 2025, at a CAGR of 12.7% during the forecast period (source : report by Markets and Markets). The growth is driven by factors such as increasing adoption of automation in manufacturing processes, government initiatives such as "Make in India" and "Digital India", and the increasing demand for advanced technologies such as Robotics, Artificial Intelligence (AI), IIoT, etc. Considerable growth is predicted to come from the segments of AI, Drones, 3D printing & Mechatronics. Being a technology driven sector having high technology products, demand is high for skilled manpower having domain expertise. Demand of skilled manpower in this sector will remain there due to high growth in the various sector such as automotive, electronics, and pharmaceutical.

Skills required by Industry mainly includes hands on knowledge on PLC, SCADA, Sensors, Pneumatics, Hydraulics, Measuring devices, mechatronic System, Industry 4.0 technologies like vision system, IIoT, AR/VR, 3D Printing, cloud, collaborative Robots, Cyber security etc.



Instrumentation



Automation



Surveillance



Communication

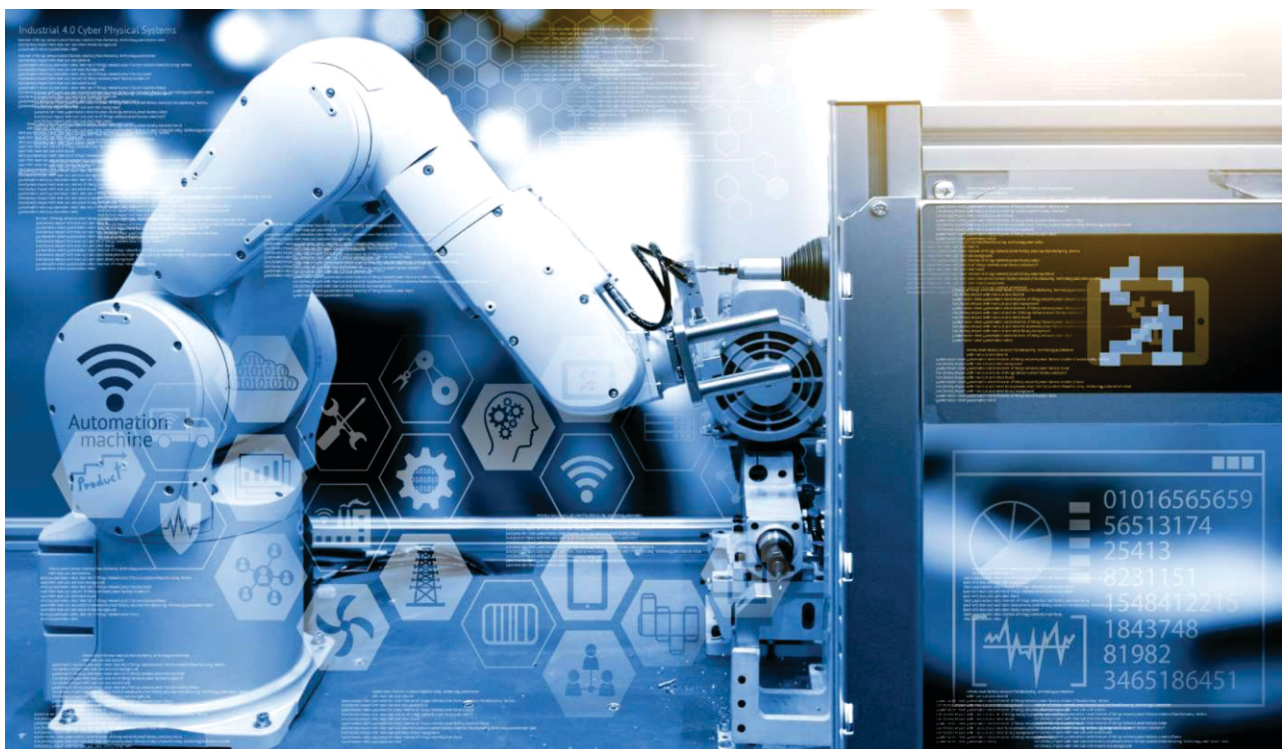
Surveillance Industry is projected to grow from USD 16.4 billion in 2020 to USD 37.6 billion by 2025, at CAGR of 18.3% during the forecast period. The growth is driven by the factors such as the increasing demand for security and safety solutions in various sectors, including government, commercial and residential and the growing need for advanced surveillance systems with features such as facial recognitions and analytics. The biggest factor driving the Industry growth has been the recent innovations in surveillance security and network offerings. The ongoing digitization and the ever increasing deployment of IP-driven surveillance systems are further catalyzing this market growth.

GLOBAL SCENARIO

India is a fastest-growing market for Instrumentation Automation Surveillance and Communication sectors globally, and the country's growing economy, favourable government policies, and increasing adoption of advanced technologies are expected to further drive the growth of these markets in the coming years. Here are some key trends and developments in the IASC sector on a global scale:

- **Increasing adoption of Industrial Internet of Things (IIoT):** With the growth of IIoT, the IASC sector is becoming increasingly important in providing the necessary instrumentation and communication infrastructure to connect these devices and enable data transmission and analysis.
- **Rise of Industry 4.0:** Qualification packs offered by IASC are focus in implementing Industry 4.0 technologies such as robotics, artificial intelligence, and machine learning.
- **Greater focus on cyber security:** As more devices are connected to networks, the risk of cyber threats increases. IASC solutions are essential in providing secure communication and ensuring the integrity of data transmission.
- **Integration with cloud computing:** The ability to store and process large amounts of data in the cloud has enabled real-time data analysis and improved decision-making in the IASC sector.

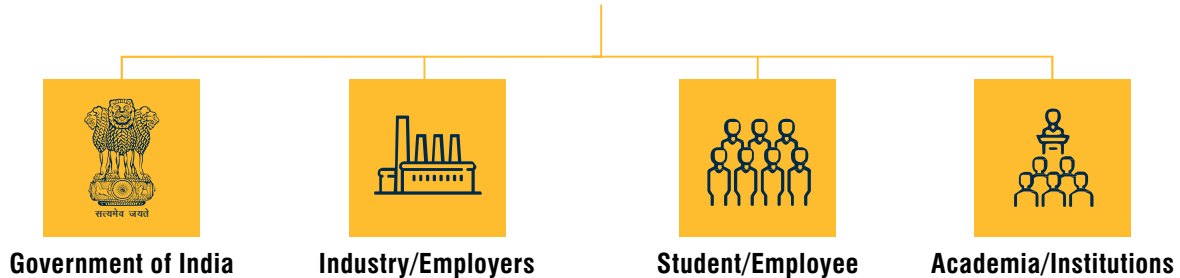
The IASC sector skill council plays a crucial role in developing a skilled workforce to meet the growing demand for IASC products and services globally.



ABOUT IASC SECTOR SKILL COUNCIL

Instrumentation Automation Surveillance & Communication Sector Skill Council (IASC SSC) is an Autonomous Industry lead Organization under the aegis of Ministry of Skill Development & Entrepreneurship (MSDE), Government of India.

STAKEHOLDERS



● Importance of IASC Sector Skill Council

- Empower Individuals through quality training and Industry recognized certification.
- Create employment and entrepreneurship opportunity in the field of Instrumentation, Industrial Automation and Industry 4.0 technologies.
- Encourage Skilling, Reskilling, Upskilling and lifelong Learning.
- Support Industry through availability of skilled workforce in the sector to address the challenge of talent shortage with domain expertise.
- Aspire youths to get skilled in Instrumentation and Automation technologies for better job opportunities.
- Carry out the functions mandated to the council.

VISION

The council is envision to play a pivotal role in generating job roles / employment in the skilling eco system by proactively converting the challenges into opportunities, emerging from the advanced level automation and Industry 4.0 technology adaptation by the Industry thus creating skilled workforce of the future.

MISSION

Skilling, Reskill and Up-skilling in the field of Instrumentation, Automation, Surveillance and communication to create a talent pool which is employable and aligned to the Industry need.

WHAT WE DO

01



CAPACITY BUILDING



- Initiate Skill Cataloguing for the IASC Industry.
- Create Comprehensive 10-Year Skill development plan for the catalogued Skills.
- Identify and create a pool of trainers, assessors, and training providers.
- Development of LMIS
- Collaborate with global expertise to upgrade skills for cross national learning and placement
- Establish a robust mechanism to facilitate and strengthen skilling ecosystem across IASC Sec

03



TRAINING & SKILL DEVELOPMENT



- Promote skill development and vocational training in IASC sector aligned to Skill India mission.
- Identification of skill development needs and preparing a catalogue of skill types.
- Upgrade the skills of existing human resource across segment of all Sub-sector and new inductees (School pass-out/drop out) unemployed youth of remote and tribal areas.
- Associate Centre and State Govt. in providing training to local youth in industry hub under the training components of appropriate Schemes.

02



INDUSTRY PARTNERSHIP



- Provide skilled workforce in alignment to technological advancements and fulfil the demandsupply gaps
- Act as a catalyst to spread awareness about the potential employment opportunities and inclusive growth in the IASC sector.
- Develop Qualification Files (QFs) and National Occupational Standards (NOSs) aligned to the needs of the industry based on the Skill Gap Analysis.
- Create & Promote “Centre of Excellence” (CoE) through Public - Private Partnership (PPP) models
- Support for apprenticeship program under NAPS

04



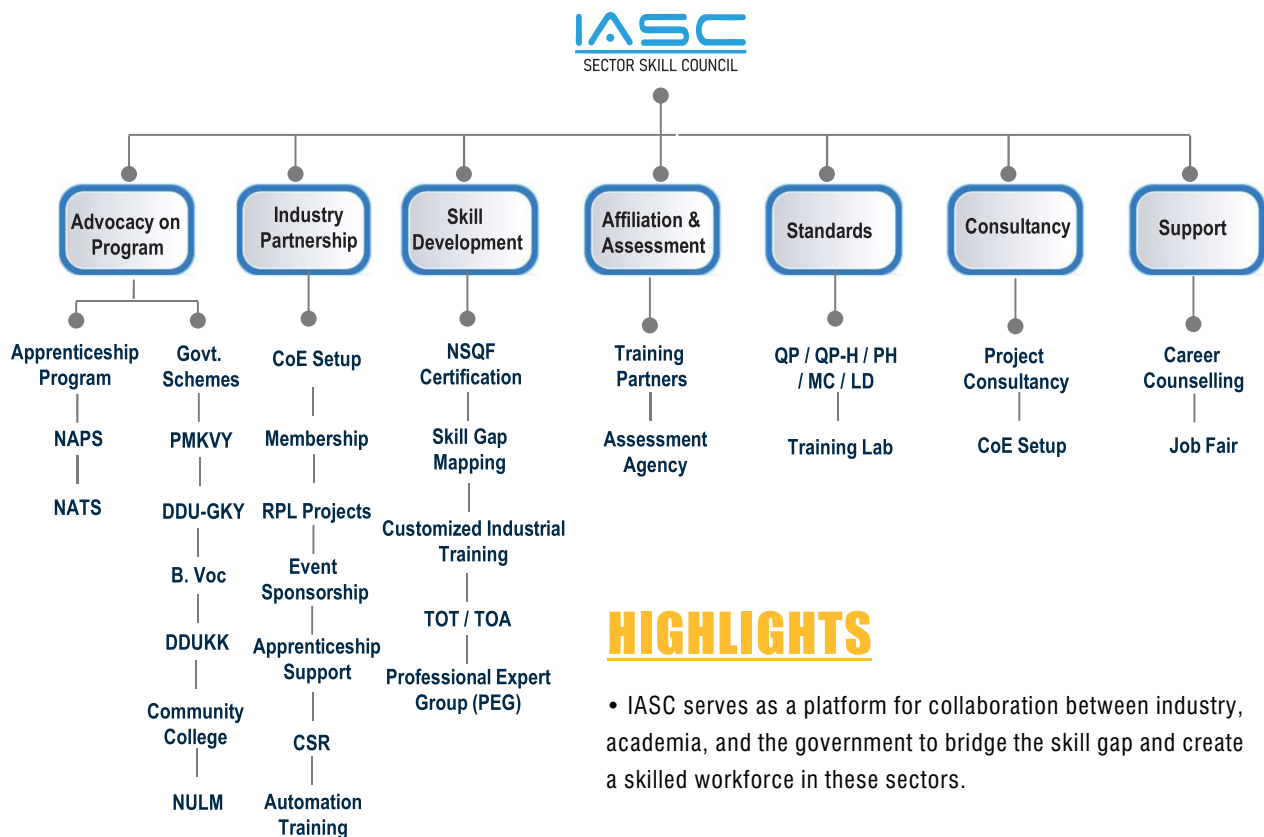
ASSESSMENT & CERTIFICATION



- Streamline Assessment & Certification Framework
- Nurture the skill ecosystem by leveraging adequate skilled resources.
- Increase industry acceptance of skill certification.
- Manage Credit Bank for participants.
- Carry out up-skilling and recognition of prior learning-based certification.

ROLE OF IASC SSC

IASC Sector Skill Council offers a range of skill development programs, including vocational training, certification, and apprenticeship programs, to enhance the employability and career prospects of individuals in these sectors. The programs are designed to impart industry-relevant skills and knowledge, keeping up with the latest advancements in technology and market trends.



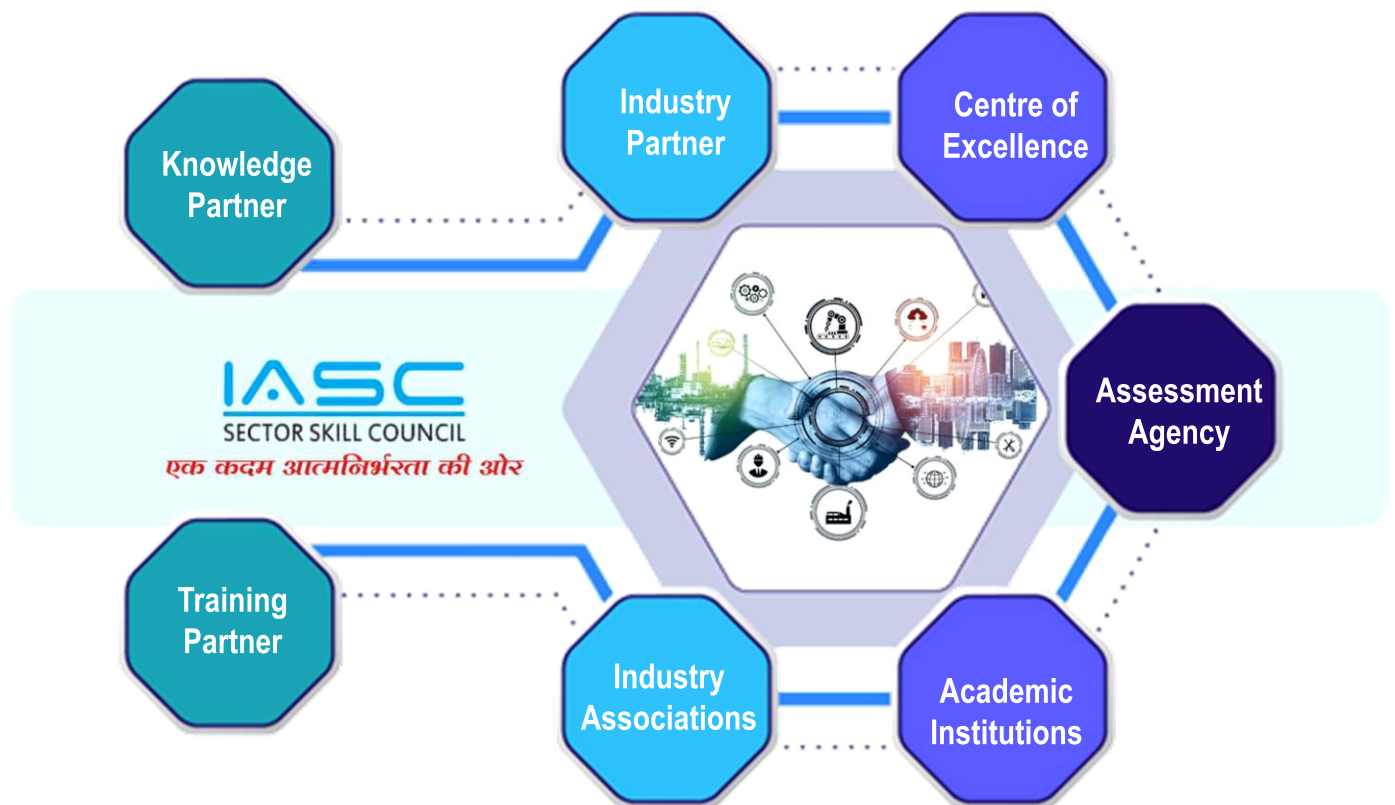
HIGHLIGHTS

- IASC serves as a platform for collaboration between industry, academia, and the government to bridge the skill gap and create a skilled workforce in these sectors.
- IASC collaborates with leading national and international companies, industry associations, and academic institutions to ensure that its programs are aligned with industry requirements and standards.
- IASC provides support services such as career counseling, placement assistance, and ongoing skill upgradation to its students, facilitating their transition into the workforce.
- IASC's initiatives contribute to the growth and development of the instrumentation, automation, surveillance, and communication sectors in India, and play a crucial role in building a skilled workforce that can drive innovation and economic progress.

OUR PARTNERS IN JOURNEY

IASC industry partnerships offer access to up-to-date industry trends, keeping students and professionals informed about the latest developments in the instrumentation, automation, surveillance, and communication sectors

We provide opportunities to work with cutting-edge technologies and tools used in the industry, allowing students and professionals to gain hands-on experience with state-of-the-art equipment and technologies.



GROWTH DRIVERS

Demand for Skilled Workforce in IASC domain

The growing demand for skilled workforce in the field of instrumentation, automation, surveillance, and communication is a significant growth driver for IASC SSC. The rapid growth in the industrial sector, including oil and gas, power, and manufacturing, has resulted in a significant demand for skilled professionals in this sector.

Technological Advancements

The technological advancements in instrumentation, automation, surveillance, and communication is another growth driver for IASC SSC. Industries are adapting latest technology due to increased focused on smart manufacturing and application of Industry 4.0 and hence the sector requires skilled professionals who can keep up with the latest technology trends and implement them in the industry.

Government Initiatives

The Government of India has been supportive of skill development initiatives, and IASC SSC has received significant support from the government. The government has initiated various schemes, including Make In India, Digital India, DDU-GKY, the Skill India Mission, to enhance the employability of the workforce in India.

Industry Support

We have collaborated with leading players in the industry to develop relevant training programs. The Industry also aligning their training module as per NSQF aligned courses and willing to participate in Govt. RPL schemes gives impetus to the skilling activities in the domain of IASC. These collaborations have helped IASC SSC to create a skilled workforce that is in sync with the needs of the industry.

Entrepreneurship Development

IASC SSC has also been instrumental in fostering entrepreneurship in the instrumentation, automation, surveillance, and communication sector. The organization has launched several programs to encourage entrepreneurship among the youth, including incubation centers, mentor ship.



TECHNOLOGY AND KNOWLEDGE PROVIDERS



TECHNOLOGY DOMAIN

The IASC Sector Skill Council encompasses various sub-sectors and technology domains that are critical in the Industry. Some of the key sub-sectors and technology domains under the IASC sector skill council include:

Industry 4.0



It is 4th industrial revolution that refers to the integration of advanced technologies in manufacturing processes to create "smart factories" that are highly automated, interconnected, & data driven.

Mechatronics



Mechatronic systems are designed to be efficient, reliable, and versatile, and they often incorporate sensors, actuators, and controllers for advanced functionalities. Mechatronics plays a crucial role in driving technological advancements.

Factory Automation



It is a transformative approach to product manufacturing to automate the processes and improve operational efficiency, productivity, and quality. Automation can include robotics, artificial intelligence, machine vision, and other cutting-edge technologies

Robotics



Robots are programmable machines that can carry out tasks autonomously or semiautonomously, often replicating human actions or performing tasks that are difficult or dangerous for humans to do.

Process Automation



Process Automation is the use of control equipment to perform manufacturing operations on individual pieces, subassemblies or batches of products with an objective to improve quality of production by minimizing manual process.

Drone Technologies



It is also known as unmanned aerial vehicles (UAVs), are being used for a wide range of applications, including aerial photography, surveying and mapping, disaster response, agriculture, infrastructure inspection, package delivery, and more.

TECHNOLOGY DOMAIN

Surveillance



Surveillance has gained immense importance in the current scenario due to its critical role in ensuring safety, security, and public health. In the current era of advanced technology and evolving threats, surveillance plays a crucial role in various areas.

Medical Instrumentation



With advancements in technology medical instrumentation has revolutionized healthcare, enabling precise and minimally invasive procedures, enhancing patient safety, and improving the accuracy of diagnoses.

Green Automation



It involves implementing sustainable practices and technologies to reduce resource consumption, waste generation, CO2 emissions, and promote environmentally responsible manufacturing. It is playing important role in shaping the future of manufacturing.

Farm Automation



Farm automation helps in improving precision agriculture practices. Sensors, drones, and other automated systems can collect data on soil moisture, temperature, and nutrient levels, allowing farmers to make data-driven decisions.

Industrial IoT



The convergence of cutting-edge technologies, such as sensors, connectivity, and data analytics, with industrial processes has paved the way for the Industrial IoT to become a critical enabler of digital transformation in various sectors.

Broadcasting & Communication



Broadcasting channels serve as platforms for advertising, promoting products, and driving consumer engagement, contributing to economic growth. Communication platforms foster innovation and enabling businesses.

INDUSTRY-RELEVANT QUALIFICATION PACKS

The Qualification Packs offered by IASC, focusing on the industry-relevant skills and knowledge required for the instrumentation, automation, surveillance and communication sectors.

NSQF Aligned Qualifications				
QP Name	QP Code	NSQF Level	Notional Hours	Credits
Additive Manufacturing (3D Printing)	IAS/Q5602	4	390	13
Building Automation Specialist	IAS/Q3006	5	570	19
Cabling Technician	IAS/Q5603	4	420	14
DCS Programmer and Troubleshooter	IAS/Q5605	4	420	14
HMI/SCADA Programmer and Trouble-shooter	IAS/Q5606	4	420	14
Industrial Automation Specialist	IAS/Q8005	5	570	19
Industrial Automation Technician	IAS/Q5601	4	390	13
Installation and Commissioning Technician (AM/FM Radio Station)	IAS/Q0204	4	420	14
Instrumentation Technician (Control Valve)	IAS/Q3001	4	420	14
Instrumentation Technician (Process Control)	IAS/Q3102	4	390	13
Junior Instrumentation Technician (Process Control)	IAS/Q3003	3	330	11
Programmable Logic Controller (PLC) Programmer and Troubleshooter	IAS/Q5604	4	450	15
Testing and Calibration Technician (Electrotechnical)	IAS/Q5003	4	450	15
Testing and Calibration Technician (Mechanical-Dimensions)	IAS/Q5002	4	450	15
Installation and Commissioning Technician (Head End)	IAS/Q0203	4	210	7
Calibration Technician (Thermal)	IAS/Q5001	4	240	8



IASC Sector Skill Council is developing Micro-credentials qualification packs that are designed to meet the specific skill requirements of industries and sectors, making them a valuable option for learners looking to enhance their skills and advance their careers.

Micro Credential QPs			
QP Name	NSQF Level	Notional Hours	Credits
Electro-Pneumatic Technology	4	30	1
PLC Programming	4	30	1
Industrial Hydraulics Application	4	30	1
System Integration (Automation)	4	30	1
Robotics Programmer	4	30	1
Plant Energy System	4	30	1
Control valve Troubleshooting	4	30	1
Sensor Technology (Automation & Surveillance)	4	30	1
Industrial Cyber Security	4	30	1
AI/ML Application in automation	4	30	1

Benefits of Micro Credential QPs	
	❖ Industry relevant and up-to-date.
	❖ Modular and flexible.
	❖ Recognized and credible.
	❖ Rapid skill acquisition.
	❖ Cost-effective.
	❖ Industry-validated.
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QUALIFICATION PACKS UNDER PROGRESS

We are developing new QPs that are allowing learners to acquire specific skills in short duration that are in demand. This makes them ideal for upskilling or reskilling purposes, allowing learners to quickly adapt to changing industry needs and stay relevant in the job market.

New Qualification Packs			
QP Name	NSQF Level	Notional Hours	Credits
Technical Sales Executive	4	420	14
B2B customer Relation Executive	4	420	14
Coding design and prototyping(For Students)	2.5	210	7
Electronics design and prototyping (For Students)	2.5	210	7
Robotics design and prototyping (For Students)	2.5	210	7



Futuristic Job Roles

- Instrumentation Engineer
- Automation Engineer
- Control Engineer
- Process Analyzer
- Instrument Mechanic
- Control Systems Technologist
- Instrumentation Technologists or Technician
- Electronics Machine Maintenance Executive
- Embedded Full stack IoT Analyst
- Embedded Product Design Engineer



- Embedded Software Engineer
- Manager- System Integration
- Process Automation Engineer
- Applied Mechatronics Specialist
- Bio Medical Instrumentation specialist
- Green Automation Expert
- Smart Farming (Farm Automation) expert
- Drone Design & Manufacturing Engineer
- Physical Securities and surveillance Specialist
- Communication & Broadcasting Technologist



SCOPE OF PARTNERSHIP

Partnering with Instrumentation Automation Surveillance Communication Sector Skill Council (IASC) can provide various benefits to organizations in the field of instrumentation, automation, surveillance, and communication. Here are some potential scopes of partnership with IASC SSC.



Organizations can join IASC as industry partners to collaborate on various initiatives related to skill development, research and development and policy advocacy. IASC can provide a platform for networking and knowledge-sharing among industry stakeholders for promoting industry interests and concerns to policy makers and regulators.

Industry Collaboration

Skill Development Programs

Industries can align their employees with skill development programs offered by IASC for Skilling, Upskilling or Reskilling or to offer training to new hires. IASC can provide access to its network of trainers and assessors who can deliver high-quality training programs aligned with industry standards and certification requirements

IASC offers certification programs for various job roles, such as entry-level technicians, specialized engineers and trainers. The organizations can collaborate with IASC to certify their employees as per industry standards and benchmarks. Certification can help organizations to demonstrate their competency with industry standards.

Certification

Curriculum Development

Industries can work with IASC to develop or update the curriculum for their training programs or courses, based on the latest industry trends and requirements. IASC can provide subject matter experts and industry representatives to review and validate the curriculum and ensure its relevance and quality.

Organizations can partner with IASC to offer job placement opportunities for their certified employees or for the candidates trained by IASC. IASC can provide access to its database of certified professionals and help organizations to match their job openings with suitable candidates.

Certification

Overall, partnering with IASC can provide organizations with access to a wide range of resources and services related to skill development, certification, curriculum development, industry collaboration, and job placement, and can help them to enhance their competitiveness and productivity in the field of instrumentation, automation, surveillance, and communication.



एक कदम आत्मनिर्भरता की ओर

Instrumentation, Automation, Surveillance & Communication Sector Skill Council

**Leading the youth towards
a bright future.....**

युवाओं के हाथों से ये भारत सँवर रहा है



हुनर के हौसलों से रोजगार बढ़ रहा है !

**Let us together a powerful platform
for skilled workforce if India !**

