

Instrument Technician

National Occupational Standard Summary



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Definition of occupation | **Instrument Technician**

The Instrument Technician installs, tests, maintains, and repairs low-voltage and low-pressure mechanical and electrical systems, including robotic and information technology systems, as well as safety, security, and communications systems. They also install and service instruments to monitor processes and equipment.

The Instrument Technician works with pneumatic, electronic, and microcomputer devices used to measure and control pressure, flow, temperature, level, motion, force, electrical signals, and chemical composition. They are responsible for inspecting, testing, calibrating, installing, and repairing these devices, and work with others to develop standard operating procedures (SOPs) and to ensure regulatory compliance.

Level of education, training or designations requirements



- Completion of post-secondary degree is required by most organizations
- Trade certification as Industrial Instrument Service Technician or Instrumentation and Control Technician is available, but voluntary, in all provinces and territories, except in Quebec
- Completion of an apprenticeship program in industrial instrument repair or a college program in industrial instrumentation technology combined with work experience is usually a requirement for trade certification
- Aptitude for math, problem-solving, mechanics, troubleshooting, and computer software
- They may serve as a point of contact for the media and represent their organization at industry forums and events:

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This role works in the following subsectors:

Applicable To	Bio-Health	Agri-Bio	Bio-Industrial	Bio-Energy
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The level of complexity of the role is:

Span of Complexity Levels	Foundational	Operational	Specialist/ Management	Expert/Executive
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Competencies	Complexity Level Required			
	1 Foundational	2 Operational	3 Specialist/ Manager	4 Expert/ Executive
Core				
Data Management				
Instrument Installation				
Technical				
Instrument Handling				
New Concepts Development				
Instrument Testing				
Troubleshooting				
Instruments Maintenance				
Instruments Repairing				
Risk Assessment				
Safety Compliance				
Process Documentation				
Information Reporting				
Industry Regulatory				
Included in Technical Competencies				
Personal and Professional				
Attention to Detail				
Problem Solving				
Communication				
Teamwork				

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Core competencies

Data Management

Implements Standard Operating Procedures (SOPs) relating to the collection of data, data capturing, data analysis, and access to the data in order to facilitate management's decision-making.

Instrument Installation

Installs and programs control and measurement instruments on existing and new equipment to improve productivity within the company as per manufacturer and company requirements.

Technical competencies

Instrument Handling

Moves, stores, controls, and protects the instrument in order to maintain/improve instrument quality and working conditions; reduce damage; promote safety, productivity, and use of facilities; and control inventory.

New Concepts Development

Assists in preparation of instrument specifications, generating the need/concept of a new instrument or system from process design to prototype development to final product in order to answer technical challenges and meet new standards.

Instrument Testing

Verifies instrument performance to determine if it is operating correctly and to ensure the instrument's reliability and capability of operating at acceptable performance levels.

Troubleshooting

Identifies and analyzes problems by determining whether or not they can be repaired, what is needed to repair them, and how long it will take to make the instruments operational again. In the case of significant issues, refers to the maintenance team

Instruments Maintenance

Conducts Preventive Maintenance (PM) to lessen the likelihood of instrument breakdowns, accidents, and the costs associated with each, and to prolong the life and proper operation of the instrument.

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Instruments Repairing

Carries out repairs in accordance with manufacturer specifications in case of instrument and/or system component failure in order to minimize downtime and maintain productivity.

Risk Assessment

Assists engineers and/or occupational health professionals in performing risk assessments to recognize and control potential hazards in the workplace and mitigate risk and impact.

Safety Compliance

Ensures own and others' safety by following safety policies and procedures in order to eliminate workplace hazards and maintain a safe work environment.

Process Documentation

Provides a detailed description of how to carry out instrument operations in order to help optimize workflows and processes, train employees, preserve company knowledge, mitigate risks, and maintain operational consistency.

Information Reporting

Takes information and presents it objectively and concisely to inform colleagues, supervisors, and other stakeholders about instrument installation, testing, calibration, quality inspection, maintenance, repairing, safety, etc.

Industry regulatory competencies

Included in Technical Competencies.

Personal and professional competencies

Attention to Detail

Ensures information is complete and accurate and follows up with the team, internal, and external stakeholders to ensure that the job requirements have been fulfilled.

Problem Solving

Understands a work-related problem or situation, acts to address inconsistencies in ongoing operations, and successfully resolves problem situations.

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Communicaton

Positively directs outcomes by delivering communication that results in a better understanding of goals and objectives and that captures interest and gains support for immediate action.

Teamwork

Interacts with supervisors/lead hands and colleagues by participating actively and contributing to the capability of the team to achieve shared goals in a safe and efficient manner.

USE NATIONAL OCCUPATIONAL STANDARDS TO:

- ✓ Build a job description
- ✓ Plan professional development
- ✓ Map career progression and succession planning
- ✓ Benchmark compensation

View the full National Occupational Standards at biotalent.ca/NOS

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