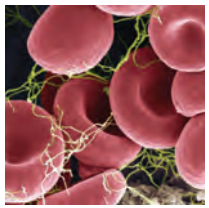

Instrument Technician

Bio-economy Skills At-a-Glance

BioTalent™ Canada

Building skills for Canada's bio-economy

About BioTalent Canada™

Helping Canada's Bio-economy thrive globally

Canada is a world leader in biotechnology—the application of living organisms to industrial, agricultural, medical and other processes and products. To maintain and build on this leadership, the sector needs highly skilled, job-ready people.

By acting as a national hub and central resource for employers, job seekers, students, educators and government agencies, BioTalent Canada helps make this happen.

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Canada Funded by the Government of Canada's Sector Council Program and Foreign Credential Recognition Program.

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About the Bio-economy

The bio-economy involves the research, development, manufacturing and commercialization of technologies and products for such areas as:

- Agriculture
- Aquaculture
- Bioenergy
- Bioinformatics
- Bioproducts
- Biosciences
- Environment
- Food Processing
- Forestry
- Genomics
- Human and Animal Health
- Industrial
- Life Sciences
- Medical Devices
- Natural Resources
- Nanotechnology
- Nutraceuticals
- Pharmaceuticals

Components of the Bio-economy Skills At-a-Glance

The *Bio-economy Skills At-a-Glance* are built around *Key Competencies.* They are *not* complete *Bio-economy Skills Profiles*. They capture the key hard and soft skills required to successfully function in this position. Those key competencies require specific tasks be accomplished in order to attain the desired outcome. More often than not, those key activities are functional in nature and require the application of specific knowledge acquired by education, training or practical experience. In bio-economy companies, those functional competencies may be very broad and diversified, encompassing both scientific and business expertise. Some may refer to functional competencies as hard skills of the position.

The *Bio-economy Skills At-a-Glance* have been developed through secondary research and have NOT been validated by industry. As a result, industry feedback will be greatly appreciated. Please send any feedback to portfolios@biotalent.ca.

The *Bio-economy Skills-At-a-Glance* are useful for such activities as recruiting, professional development, coaching, self-assessment, and many other purposes.

Occupational Description

Instrument technicians maintain, test, troubleshoot and repair a variety of manufacturing facility instrumentation. They lay out, build, test, troubleshoot, repair, and modify developmental and production electronic components, parts, equipment, and systems. They calibrate instrumentation and perform validation studies, analyzing results and using testing information to develop test specifications and electrical schematics.

Potential Professional Background and Education/Bio-economy or Relevant Experience

Education/Certification

- 2-year college program, industrial instrumentation technology
- Some employers may require a university degree in electrical engineering

Professional Experience

- 2 - 3 years related experience. Some employers may require more
- Knowledge of reliability analysis, methodology and tools
- Working knowledge of cGMP
- Knowledge of Distributed Control Systems (DCS)
- Knowledge of Programmable Logic Controller (PLC) systems

Competencies and Tasks

An Instrument Technician must be able to:

A. Gather Information

TASKS
1. Review production information reports / shift logs
2. Read work orders to determine required specifications
3. Review operational manuals and instrument documentation

B. Analyse and process data and information

TASKS
1. Interpret assembly drawings
2. Interpret blueprints
3. Interpret circuit diagrams
4. Interpret schematics

C. Document structures, devices, parts, and equipment

TASKS
1. Assist in the preparation of engineering designs
2. Assist in the preparation of component and instrument specifications
3. Assist with development of validation requirements

D. Design, develop or create new concepts and constructs

TASKS
1. Develop a continuous testing system
2. Maintain a continuous testing program
3. Develop maintenance standards, schedules and programs

E. Install instrumentation

TASKS
1. Install control and measurement instruments on existing and new plant equipment and processes
2. Program instruments
3. Identify calibration requirements
4. Identify maintenance requirements

F. Inspect equipment, structures, or materials

TASKS
1. Assist with the development of inspection schedules
2. Assist in the inspection of instrument and controller installations
3. Inspect and test operation of instruments and systems

G. Repair and maintain electronic equipment and instruments

TASKS
1. Diagnose faults using pneumatic, electrical and electronic testing devices
2. Repair and adjust system components (e.g., sensors, transmitters)
3. Calibrate components and instruments
4. Provide troubleshooting assistance
5. Perform validations

H. Document, record and report information

TASKS
1. Prepare calibration reports
2. Prepare instrument maintenance reports
3. Report on deviations and 'out of tolerance' incidents
4. Prepare installation reports

I. Document and comply with policies and procedures

TASKS
1. Contribute to the development of policies and procedures
2. Implement policies and procedures
3. Develop work instructions
4. Maintain regulatory compliance
5. Follow current Good Manufacturing Practices (cGMP)

J. Use computers

TASKS
1. Use email software as appropriate
2. Use Microsoft Office as appropriate
3. Use database software as appropriate

K. Demonstrate Personal Competencies

TASKS
1. Demonstrate teamwork
2. Exhibit sensitivity to cultural and social diversity
3. Be customer service focused
4. Work in a fast-paced environment
5. Follow company's policies and procedures
6. Demonstrate time management skills
7. Manage stress
8. Be a quick learner
9. Communicate effectively and clearly

Strong Board of Directors

The Board of Directors is composed of experts in the field of HR, CEOs, CFOs and CSOs from across Canada with extensive financial and industry experience representing companies and organizations in Canada's bio-economy. BioTalent Canada is not a membership organization and therefore relies on the guidance provided by its dedicated volunteer Board of Directors.

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