



Process Development Technician

Bio-economy Skills At-a-Glance



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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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

A Process Development Technician defines, develops and optimizes processes and equipment used in the laboratory, the pilot plant and in manufacturing. They validate/qualify processes and equipment.

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

EDUCATION/CERTIFICATION

- University degree in engineering or related discipline.
- Some employers will accept equivalent academic credentials.

PROFESSIONAL EXPERIENCE

- Experience with computerized documentation.
- Experience with micro measurement equipment.

Competencies and Tasks

A Process Development Technician must be able to:

A. Gather information

TASKS
1. Conduct time studies
2. Conduct tests and laboratory analysis
3. Perform analytical testing
4. Perform experimental procedures
5. Read work orders to determine required specifications
6. Research on new technologies, processes, regulations and legislation
7. Read blueprints and schematics
8. Review operational manuals and equipment documentation
9. Review operational manuals and instrument documentation
10. Review production information reports / shift logs
11. Use Material Safety Data Sheets (MSDS)

B. Analyze data and information

TASKS
1. Analyze data
2. Analyze machinery and equipment and make recommendations
3. Analyze non-conformances
4. Analyze production costs
5. Interpret and analyze test and analysis data
6. Assist in analysis of data
7. Interpret assembly drawings
8. Interpret blueprints
9. Interpret schematics
10. Interpret technical drawings
11. Perform mathematical calculations
12. Evaluate production efficiency and effectiveness

C. Determine compliance with standards

TASKS
1. Determine conformance to accepted specifications
2. Evaluate quality of raw materials, in-process materials and finished goods
3. Perform sampling, inspection and physical testing on in-process/investigational samples
4. Perform validations using QC test methods
5. Perform verification and validation activities on equipment and manufacturing processes
6. Perform verification and validation of QC test methods
7. Support process-related validation studies

D. Develop new concepts and constructs

TASKS
1. Develop manufacturing systems
2. Develop organizational and management systems
3. Develop process development strategies

TASKS
4. Develop work simplification programs

E. Document structures, devices, parts, and equipment

TASKS
1. Assist in the design of plant and facility layouts
2. Assist in the preparation of engineering designs
3. Assist with the development of validation requirements
4. Develop preliminary process flow sheets
5. Develop process drawings
6. Assist in the preparation of component and machine specifications
7. Assist in the evaluation of production efficiency and effectiveness
8. Conduct work measurement or other studies
9. Identify maintenance requirements

F. Plan work

TASKS
1. Collect samples for analysis
2. Prepare samples for analysis
3. Set up to conduct tests and laboratory analysis

G. Inspect equipment, structures, or materials

TASKS
1. Assist with the inspection of facilities and manufacturing equipment
2. Inspect and test operation of machinery and equipment
3. Perform inspection and physical testing on finished product samples
4. Perform inspection and physical testing on in-process/investigational samples
5. Perform inspection and physical testing on raw material samples
6. Perform validations on machinery and equipment

H. Operate machines

TASKS
1. Assist in machine operations
2. Operate cranes or hoists as required
3. Operate machinery and equipment
4. Operate material handling equipment such as forklifts, front-end loaders and scissor-lifts
5. Set up machinery and equipment
6. Perform product sample testing
7. Monitor machinery and equipment
8. Provide troubleshooting assistance

I. Maintain equipment

TASKS
1. Assist in repairing machinery and equipment
2. Clean and lubricate machinery and equipment
3. Perform equipment and machinery maintenance
4. Troubleshoot machine and equipment malfunctions

J. Report information

TASKS
1. Prepare technical reports
2. Record test and inspection results and findings
3. Prepare validation/qualification reports
4. Report on deviations and 'out of tolerance' incidents
5. Assist in the preparation of technical reports
6. Report on new technologies, processes, regulations and legislation

K. Comply with policies and procedures

TASKS
1. Apply analytical chemical test methods and techniques
2. Contribute to the development of policies and procedures
3. Contribute to the development of safety and security procedures
4. Develop policies and procedures
5. Develop work instructions
6. Follow current Good Manufacturing Practices (cGMP)
7. Implement policies and procedures
8. Implement quality standard procedures
9. Maintain policies and procedures

L. Handle materials

TASKS
1. Measure raw materials
2. Move, sort, stack, bundle and label materials
3. Package goods
4. Transport materials and finished products

M. Perform administrative activities

TASKS
1. Monitor inventory
2. Prepare supply and service requisitions
3. Procure materials and supplies

N. Use computers

TASKS
1. Use email software as appropriate

TASKS
2. Use Microsoft Office as appropriate
3. Use database software as appropriate
4. Use building management systems (BMSs) as appropriate
5. Use computer-assisted design (CAD) software as appropriate
6. Use laboratory information management systems (LIMS) as appropriate
7. Use ERP (SAP) computer software as appropriate
8. Use intranet as appropriate
9. Use the Internet as appropriate

O. 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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