

## MACHINIST

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**Credential Issued:**

ITA Certificate of Qualification (Machinist)

Inter-Provincial Red Seal Endorsement (Machinist)

(Persons completing a formal apprenticeship also receive a Certificate of Apprenticeship)

**Occupational Description:**

"Machinist" means a person who sets up and operates all machine tools such as Lathes, Milling Machines Saws, Grinding Machines, Drilling and Boring Machines, Shapers, Planers, Precision Measuring tools, Hand and Power tools, and the related attachments and accessories, including C.N.C. machining, selection, use and maintenance of cutting tools.

**Program Duration & Structure:**

The program will be delivered in a variety of formats combining in-school and work-based training, all designed to meet the competency standards and profile defined by the industry, and will generally take 4 years to complete. The program includes:

- In-school: 26 weeks\* - (780 hours)  
(approximately 6 weeks each for levels 1 and 2, 7 weeks each for levels 3 and 4)
- Work-based: 6600 hours

\*The in-school / technical training requirement is typically met through block release training delivered by an ITA approved training provider. It can also be met through approved alternative training models (e.g. distance education, part-time) and / or level challenge exam where these options are available.

**Program Completion Requirements:**

Completion of 6600 workplace hours:

- Recommendation for Certification signed by the Sponsor and a certified Machinist or equivalent

Completion of technical training: (Requirement can be met through challenging a level exam where available.)

- Level 1 - in-school assessment and ITA standardized examination
- Level 2 - in-school assessment and ITA standardized examination
- Level 3 - in-school assessment and ITA standardized examination
- Level 4 - in-school assessment and ITA standardized examination

Inter-Provincial Red Seal Examination

**Program Challenge Requirements:**

- 9900 documented hours of directly related work experience required to challenge Inter-Provincial Red Seal examination.

**Program Pre-requisites:**

- Recommended Education: Grade 10 or equivalent including English 10, Math 10, and Science 10.
- Preferred: Grade 12

**Assessment Methods:**

- In-school assessments (practical and written exams)
- Work-based assessments (practical)
- Final Assessment (Inter-Provincial Red Seal written examination)
- ITA Standardized Level Examinations by challenge

**Linkages to Other Credentials:*****Cross Program Credit***

- Holders of a BC Certificate of Qualification in Tool and Die Maker and/or Millwright will be eligible to receive technical training credit for Level 1 Machinist.
- Holders of a military certificate in Marine Engineering Technician, MT #313, and who are QL 5 or higher are eligible to challenge the Machinist Inter-Provincial Red Seal examination.

**Prior Learning Assessment:**

n/a

**Program Standards Documentation:**

- National Occupational Analysis (2005) [www.red-seal.ca](http://www.red-seal.ca)
- Program Outline

**Industry Program Standards Mechanism:**

Resource Industry Training Organization (RTO) [info@rtobc.com](mailto:info@rtobc.com)

**Program Providers:**

Institution-based component of the program is delivered by public post-secondary institutions (see [www.educationplanner.bc.ca/apprenticeship.cfm](http://www.educationplanner.bc.ca/apprenticeship.cfm) for a list of schools), private training institutions, and secondary schools that have been approved by ITA.

**Technical Training Content:*****Level 1***

Safety  
Hand Tools  
Trade Math  
Blueprint Reading and Sketching  
Measuring Devices  
Layout  
Cutting Tools  
Machine Operations  
Machine Maintenance  
Fabrication and Assembly  
Abrasive Machining  
Thread Theory

***Level 2***

Trade Mathematics  
Blueprint Reading and Sketching  
Measuring Devices  
Layout  
Cutting Tools  
Machine Operations  
Metallurgy and Materials  
Abrasive Machining

**Level 3**

Trade Math  
Measuring Devices  
Cutting Tools  
Machine Operation  
Fabrication and Assembly  
Metallurgy and Materials  
Abrasive Machining

**Level 4**

Machine Operations  
Metallurgy and Materials  
Gear Cutting  
C.N.C. Machines  
Jigs and Fixtures  
Blueprint Reading and Sketching

**IP Examination Competencies: (NOA 2005)**

1. Occupational Skills
2. Bench Work
3. Drill Presses
4. Lathes
5. Mills
6. Saws
7. Grinders
8. Computer Numerical Control (CNC) Machines

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