

## INDUSTRIAL ELECTRICIAN

---

### Occupation Description

"Industrial Electrician" means a person who inspects, installs, tests, troubleshoots, repairs, and services industrial electrical equipment and associated electrical and electronic controls. Service includes calibration and preventative/predictive maintenance. Industrial Electricians are employed by maintenance departments of plants, mines, smelters, oil and gas rigs as well as platforms, mills, shipyards, factories and other industrial establishments. Some are employed by electrical contractors.

For detailed information on the scope of knowledge and skills taught and assessed in this program refer to the Program Outline, available on the ITA website.

### Pathways to Certification

In BC, an individual can become certified as an Industrial Electrician by completing the Industrial Electrician Apprenticeship program or by challenging the certification. Apprenticeship programs are for individuals who have an employer to sponsor them and challenge programs are for individuals who have extensive experience working in the occupation and wish to challenge the certification.

Youth can begin an apprenticeship in high school through the Youth Train in Trades or Youth Work in Trades programs. The Youth Work in Trades program is available for any trade if an employer is willing to sponsor the student. Trades offered through the Youth Train in Trades vary by region; contact your local school district to find out which technical training programs are being offered through the Youth Train in Trades program in your region.

Foundation programs, where available, provide adults and youth who do not have work experience nor employer sponsorship with an opportunity to gain the knowledge and skills needed to enter the occupation. Individuals who wish to enroll in a Foundation program must register directly with the training provider.

### Recommended Education

The following education is recommended for apprentices entering this occupation. These are not prerequisites, but rather a desired level of skill or knowledge that will contribute to success in the industry.

- Grade 12 or equivalent including: English 12, Mathematics 12 and Physics 12

### ITA Registration

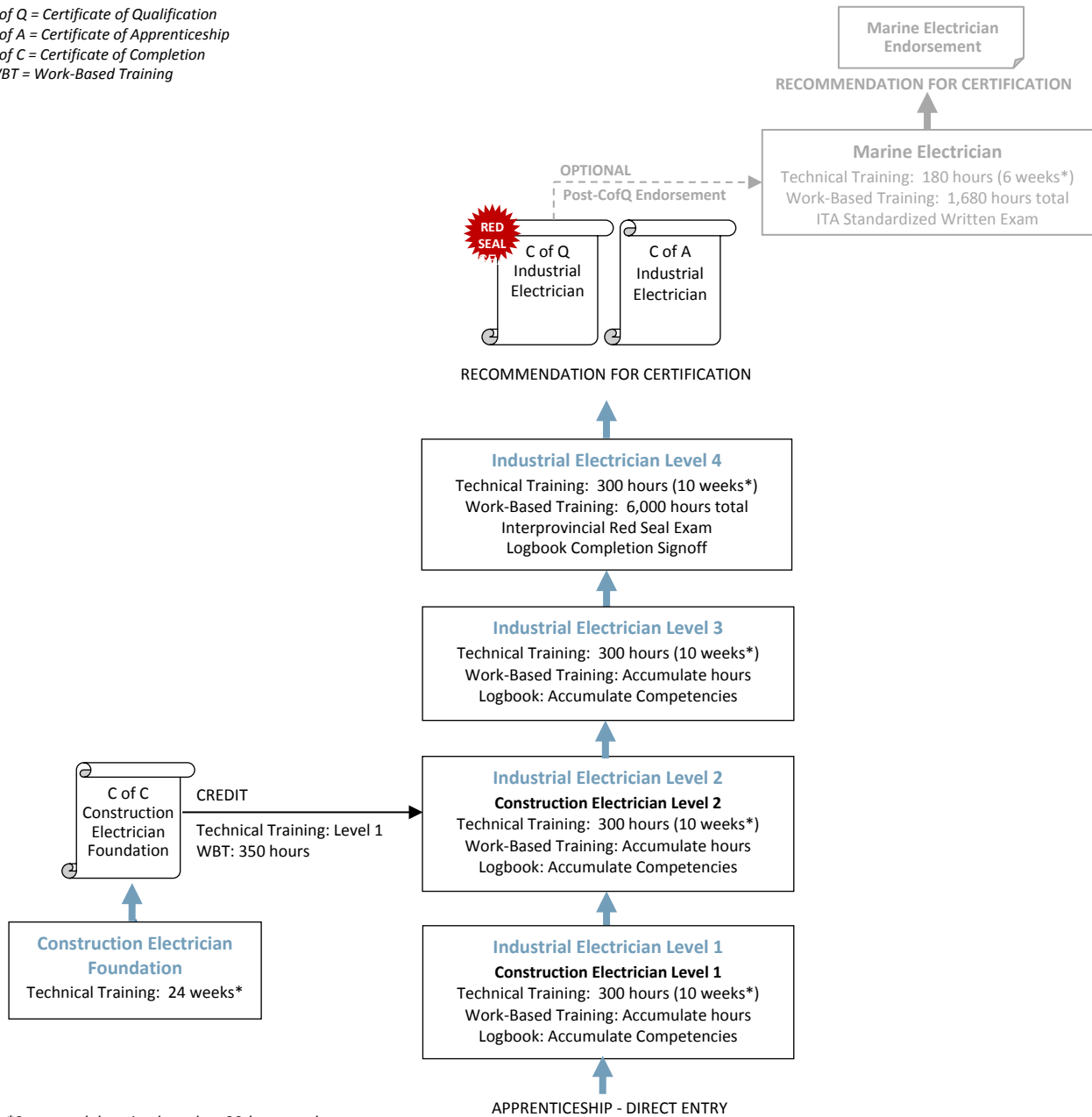
Individuals who wish to begin an apprenticeship in this program must register with ITA along with their sponsor. Application forms for all programs are available from the ITA website. Online registration is also available for most programs through the ITA website.

Those who wish to challenge the Industrial Electrician certification must complete the Industrial Electrician Challenge Application and submit it to ITA. Challenge applications are assessed for proof of workplace hours and scope of experience prior to acceptance of the individual into the Challenge pathway.

### Apprenticeship Pathway with Optional Endorsement

This graphic provides an overview of the Industrial Electrician (IE) apprenticeship pathway.

C of Q = Certificate of Qualification  
C of A = Certificate of Apprenticeship  
C of C = Certificate of Completion  
WBT = Work-Based Training



**CROSS-PROGRAM CREDITS**

Individuals who hold the credentials listed below are entitled to receive partial credit toward the completion requirements of this program

Construction Electrician Level 1 & 2 Technical Training	Technical Training: Level 1 & 2 Work-Based Training: None
---	--

**Apprenticeship Program Standards**

<b>Credentials Awarded</b>	<ul style="list-style-type: none"> <li>▪ Industrial Electrician – Certificate of Qualification with Interprovincial Red Seal endorsement</li> <li>▪ Industrial Electrician – Certificate of Apprenticeship</li> </ul>
----------------------------	---

<b>ITA Registration Prerequisites</b>	Signed agreement from employer to sponsor the apprentice
---------------------------------------	--

<b>Completion Requirements</b>	Certification as an Industrial Electrician is awarded upon successful completion of:
--------------------------------	--

Requirement	Level of Achievement Required
Construction Electrician Level 1 Technical Training 300 hours (10 weeks*)	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>
Construction Electrician Level 2 Technical Training 300 hours (10 weeks*)	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>
Industrial Electrician Level 3 Technical Training 300 hours (10 weeks*)	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>
Industrial Electrician Level 4 Technical Training 300 hours (10 weeks*)	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>
Work-Based Training	<ul style="list-style-type: none"> <li>▪ 6,000 hours</li> </ul>
Industrial Electrician Logbook	<ul style="list-style-type: none"> <li>▪ Industrial Electrician apprentices are required to keep a logbook recording their work experience throughout their apprenticeship. Credentials eligible to sign off the logbook: See Sign-off Authority list.</li> </ul>
Interprovincial Red Seal Exam	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>
Recommendation for Certification	<ul style="list-style-type: none"> <li>▪ Recommendation for certification signed by the Sponsor and an individual holding credentials eligible for sign-off authority</li> </ul>

(\*Assuming 30 hours in school per week)

<b>Program Duration</b>	<p>Duration varies depending on how training is delivered, but the program generally takes four years to complete.</p> <p>The technical training requirement is typically met through block-release training (full-time, at school) delivered by an ITA-approved training provider. It can also be met through approved alternative training models (e.g. distance education, online, part-time) and/or level challenge where these options are available.</p>
-------------------------	--



**Apprenticeship Program Standards**

<b>Sign-off Authority</b>	<p>Credentials eligible to sign-off on the Industrial Electrician Logbook and Recommendation for Certification:</p> <ul style="list-style-type: none"> <li>▪ Industrial Electrician – Certificate of Qualification with Interprovincial Red Seal endorsement</li> <li>▪ Industrial Electrician – Certificate of Qualification</li> <li>▪ Construction Electrician – Certificate of Qualification with Interprovincial Red Seal endorsement</li> <li>▪ Construction Electrician – Certificate of Qualification</li> <li>▪ Electrician – Certificate of Qualification with Interprovincial Red Seal endorsement</li> <li>▪ Electrician – Certificate of Qualification</li> </ul>				
<b>Challenging a Level</b>	<p>The following levels of technical training can be challenged for advanced placement in this program:</p> <ul style="list-style-type: none"> <li>▪ None</li> </ul>				
<b>Cross-Program Credits</b>	<p>Individuals who hold the credentials listed below are entitled to receive partial credit toward the completion requirements of this program</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Credential</th> <th style="text-align: left;">Credit(s) Granted</th> </tr> </thead> <tbody> <tr> <td>Construction Electrician Level 1 and 2 Technical Training</td> <td> <ul style="list-style-type: none"> <li>▪ Technical Training: Levels 1 and 2</li> <li>▪ Work-Based Training: None</li> </ul> </td> </tr> </tbody> </table>	Credential	Credit(s) Granted	Construction Electrician Level 1 and 2 Technical Training	<ul style="list-style-type: none"> <li>▪ Technical Training: Levels 1 and 2</li> <li>▪ Work-Based Training: None</li> </ul>
Credential	Credit(s) Granted				
Construction Electrician Level 1 and 2 Technical Training	<ul style="list-style-type: none"> <li>▪ Technical Training: Levels 1 and 2</li> <li>▪ Work-Based Training: None</li> </ul>				
<b>Program Description</b>	<p>Refer to the Industrial Electrician Program Outline, and Levels 1 and 2 of the Construction Electrician Program Outline for detailed information on the competencies, learning tasks, content and achievement criteria associated with this program. These Program Outlines are available from the ITA website.</p>				
<b>Training Topics</b>	<p>Refer to the <b>Training Topics and Suggested Time Allocation</b> in each Program Outline for an overview of the scope of competencies covered in the technical training, the suggested proportion of time spent on each general area of competency, and the percentage of that time spent on theory versus practical application.</p>				

### Marine Electrician Endorsement Program

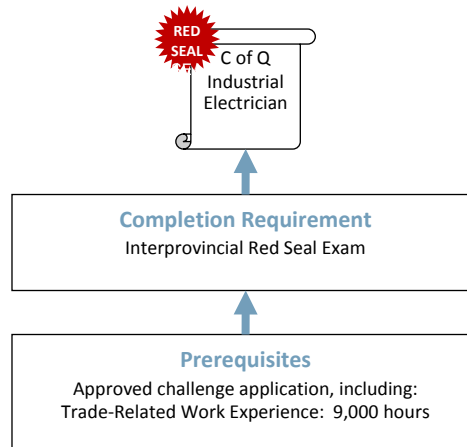
Refer to the Apprenticeship pathway credentialing model for this program to see how the Marine Electrician Endorsement program fits into the apprenticeship pathway for this occupation.

#### Marine Electrician Endorsement Program

<b>Credentials Awarded</b>	<ul style="list-style-type: none"> <li>▪ Marine Electrician Endorsement</li> </ul>										
<b>ITA Registration Prerequisites</b>	<ul style="list-style-type: none"> <li>▪ Agreement signed by the employer to sponsor the apprentice</li> <li>▪ Red Seal certification in a qualifying trade:               <ul style="list-style-type: none"> <li>○ Construction Electrician OR</li> <li>○ Industrial Electrician</li> </ul> </li> </ul>										
<b>Completion Requirements</b>	<p>Certification as a Marine Electrician is awarded upon successful completion of:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;">Requirement</th> <th style="text-align: left; width: 50%;">Level of Achievement Required</th> </tr> </thead> <tbody> <tr> <td>Technical Training</td> <td>           Minimum 70% in each level of technical training:           <ul style="list-style-type: none"> <li>▪ Level 1: 180 hours (or 6 weeks*)</li> </ul> </td> </tr> <tr> <td>ITA Standardized Written Exam</td> <td> <ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul> </td> </tr> <tr> <td>Work-Based Training</td> <td> <ul style="list-style-type: none"> <li>▪ 1,680 hours</li> </ul> </td> </tr> <tr> <td>Recommendation for Certification</td> <td> <ul style="list-style-type: none"> <li>▪ Recommendation for certification signed by the Sponsor and an individual holding credentials eligible for sign-off authority</li> </ul> </td> </tr> </tbody> </table> <p style="text-align: center;"><i>(*Assuming 30 hours in school per week)</i></p>	Requirement	Level of Achievement Required	Technical Training	Minimum 70% in each level of technical training: <ul style="list-style-type: none"> <li>▪ Level 1: 180 hours (or 6 weeks*)</li> </ul>	ITA Standardized Written Exam	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>	Work-Based Training	<ul style="list-style-type: none"> <li>▪ 1,680 hours</li> </ul>	Recommendation for Certification	<ul style="list-style-type: none"> <li>▪ Recommendation for certification signed by the Sponsor and an individual holding credentials eligible for sign-off authority</li> </ul>
Requirement	Level of Achievement Required										
Technical Training	Minimum 70% in each level of technical training: <ul style="list-style-type: none"> <li>▪ Level 1: 180 hours (or 6 weeks*)</li> </ul>										
ITA Standardized Written Exam	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>										
Work-Based Training	<ul style="list-style-type: none"> <li>▪ 1,680 hours</li> </ul>										
Recommendation for Certification	<ul style="list-style-type: none"> <li>▪ Recommendation for certification signed by the Sponsor and an individual holding credentials eligible for sign-off authority</li> </ul>										
<b>Program Duration</b>	<p>Duration varies depending on how training is delivered, but the program generally takes 1 year to complete.</p> <p>The technical training requirement is typically met through block-release training (full-time, at school) delivered by an ITA-approved training provider. It can also be met through approved alternative training models (e.g., distance education, online, part-time) and/or level challenge where these options are available.</p>										
<b>Sign-off Authority</b>	<p>Credentials eligible to sign-off on the Recommendation for Certification:</p> <ul style="list-style-type: none"> <li>▪ Construction Electrician – Certificate of Qualification with Red Seal endorsement</li> <li>▪ Industrial Electrician – Certificate of Qualification with Red Seal endorsement</li> <li>▪ Marine Electrician Endorsement holders</li> </ul>										
<b>Challenging a Level</b>	<p>The following levels of technical training can be challenged for advanced placement in this program</p> <ul style="list-style-type: none"> <li>▪ None</li> </ul>										
<b>Cross-Program Credits</b>	<p>Individuals who hold the credentials listed below are entitled to receive partial credit toward the completion requirements of this program</p> <ul style="list-style-type: none"> <li>▪ None</li> </ul>										

**Challenge Pathway**

This graphic provides an overview of the Industrial Electrician challenge pathway.



**CREDIT FOR PRIOR LEARNING**

*Individuals who hold the credentials below are entitled to receive partial credit toward the completion requirements of this program*

Military certificate in Electrical Technician MT #125 / Marine Electrician MT #331/332, QL5 or higher

Work-Based Training: 9,000 hours

### Challenge Program Standards

<b>Credentials Awarded</b>	Industrial Electrician – Certificate of Qualification with Red Seal endorsement				
<b>Registration Prerequisites</b>	<p>An approved Challenge Application, which includes:</p> <ul style="list-style-type: none"> <li>▪ 9,000 documented hours of directly related experience working in the occupation</li> </ul>				
<b>Credentials Entitled to Challenge</b>	<p>Individuals who hold the credentials listed below are considered to have met the prerequisites for challenging this program</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;">Credential</th> <th style="text-align: left; width: 50%;">Credit(s) Granted</th> </tr> </thead> <tbody> <tr> <td>Military certificate in Electrical Technician MT #125 / Marine Electrician MT #331/332, QL5 or higher</td> <td> <ul style="list-style-type: none"> <li>▪ 9,000 workplace hours</li> <li>▪ Approved Challenge Application</li> </ul> </td> </tr> </tbody> </table>	Credential	Credit(s) Granted	Military certificate in Electrical Technician MT #125 / Marine Electrician MT #331/332, QL5 or higher	<ul style="list-style-type: none"> <li>▪ 9,000 workplace hours</li> <li>▪ Approved Challenge Application</li> </ul>
Credential	Credit(s) Granted				
Military certificate in Electrical Technician MT #125 / Marine Electrician MT #331/332, QL5 or higher	<ul style="list-style-type: none"> <li>▪ 9,000 workplace hours</li> <li>▪ Approved Challenge Application</li> </ul>				
<b>Completion Requirements</b>	<p>Certification as an Industrial Electrician is awarded upon successful completion of:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;">Requirement</th> <th style="text-align: left; width: 50%;">Level of Achievement Required</th> </tr> </thead> <tbody> <tr> <td>Interprovincial Red Seal Exam</td> <td> <ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul> </td> </tr> </tbody> </table>	Requirement	Level of Achievement Required	Interprovincial Red Seal Exam	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>
Requirement	Level of Achievement Required				
Interprovincial Red Seal Exam	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>				
<b>Competencies Assessed</b>	<p>Refer to the <b>Training Topics and Suggested Time Allocation</b> section of the Program Outline or the Challenge Application for this program for an overview of the scope of competencies covered in the technical training for this program. The Program Outline is available from the ITA website.</p>				

### Foundation Program

Refer to the Apprenticeship pathway credentialing model for this program to see how the Construction Electrician Foundation program fits into the apprenticeship pathway for this occupation.

#### Foundation Program Standards

<b>Credentials Awarded</b>	Construction Electrician – Certificate of Completion	
<b>Enrollment Prerequisites</b>	Contact training provider. Prerequisites vary between training institutions	
<b>Completion Requirements</b>	A Certificate of Completion in this program is awarded upon successful completion of:	
	<b>Requirement</b>	<b>Level of Achievement Required</b>
	Technical Training	<ul style="list-style-type: none"> <li>▪ Minimum 70%</li> </ul>
<b>Program Duration</b>	Duration varies depending on how training is delivered, but program generally takes 24 weeks to complete	
<b>Credit toward Apprenticeship</b>	Individuals who complete the Construction Electrician Foundation program will receive the following credit toward completion of the Industrial Electrician apprenticeship program: <ul style="list-style-type: none"> <li>▪ Technical Training: Level 1</li> <li>▪ Work-Based Training: 350 hours</li> </ul>	
<b>Training Topics</b>	<b>General Areas of Competence</b> <ul style="list-style-type: none"> <li>▪ Safe work practices</li> <li>▪ Tools and equipment</li> <li>▪ Circuit concepts</li> <li>▪ Test equipment</li> <li>▪ Drawing and manuals</li> <li>▪ CEC, regulations and standards</li> <li>▪ Low voltage distribution systems</li> <li>▪ Control circuits</li> </ul>	<b>Essential Skills</b> <ul style="list-style-type: none"> <li>▪ Interpersonal skills</li> <li>▪ Teamwork skills</li> <li>▪ Document use, text reading and numeracy skills</li> <li>▪ Critical thinking skills</li> <li>▪ Communication and listening skills</li> <li>▪ Problem solving and troubleshooting skills</li> <li>▪ Decision making skills</li> <li>▪ Computer use skills</li> <li>▪ Job planning and organization skills</li> <li>▪ Safety skills</li> <li>▪ Use of hand tools and equipment skills</li> </ul>





### Supporting Documents

Industrial Electrician Program Outline (2011) plus Levels 1 and 2 of the Construction Electrician Program Outline (2006) – Defines the full scope of knowledge and skills required to competently perform the occupation in BC. Available from the ITA website.

Industrial Electrician National Occupational Analysis Chart (2011) – Prepared by industry experts, under the guidance of the federal government, for Red Seal trades to define the national standard of competence for the trade. Available from the Red Seal website: [www.red-seal.ca](http://www.red-seal.ca).

Industrial Electrician Logbook – Industrial Electrician apprentices are required to keep a logbook recording their work experience throughout their apprenticeship. The logbook is also used to validate completion of required workplace competencies. Available from the ITA website.

### Contacts

The Industry Training Authority (ITA) manages B.C.'s industry training and apprenticeship programs. Contact ITA Customer service if you have any questions regarding registration, examinations or certification for this program.

Telephone: 778-328-8700  
Toll Free (within BC): 1-866-660-6011  
Website: [www.itabc.ca](http://www.itabc.ca)

Fax: 778-328-8701  
Email: [customerservice@itabc.ca](mailto:customerservice@itabc.ca)

### Revision History

The standards for this program were reviewed and/or updated on the dates below.

Program Standards Approved:	February 2006 (ITA)
Updated:	January 2009
Updated:	February 2016
Updated:	July 2016
Updated:	November 2016
Updated:	January 2017
Updated:	May 2017

Program Profiles are updated regularly. Visit [www.itabc.ca](http://www.itabc.ca) for the most current version.