

YOUR TRADE CERTIFICATION GUIDEBOOK



INDUSTRIAL ELECTRICIAN

**INDUSTRIAL ELECTRICIAN PROGRAM
HARMONIZED
IMPLEMENTED DECEMBER 2018**

ita
YOUR TICKET.

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YOUR TRADES TRAINING

It's an exciting time to be in the skilled trades industry! BC is growing and so is the demand for skilled tradespeople in the province. Almost one million jobs are expected to be created by 2025 in BC, many of them being in the construction industry.

With the increasing number of retirees in the trades community, there is a need for more driven individuals like you to pursue careers in trades. From the building you're sitting in right now to the cars you drove to get there, there are a number of tradespeople that were involved in the design, creation, and maintenance of them.

Congratulations on starting your journey to certification. You are on your way to becoming a key contributor to BC's trade industry and your community.

ABOUT INDUSTRY TRAINING AUTHORITY:

The Industry Training Authority (ITA) leads and coordinates British Columbia's skilled trades system. ITA works with employers, employees, industry, labour, training providers, and government to issue credentials, manage apprenticeships, set program standards, and increase opportunities in the trades.

APPRENTICESHIP RESPONSIBILITIES

Work-Based Hours (WBT) – Reporting your work-based training hours is essential to completing your Apprenticeship. It is your responsibility to confirm with your Sponsor/Employer that your hours have been reported to ITA and applied to your Apprenticeship record.

If your previous Employer has not submitted work based hours for you, the WBT form allows your current Sponsor/Employer to sign off those hours.

You can find a copy of the **work-based training form** here:

www.itabc.ca/forms

Sponsor/Employer – If you have changed your employer, it is important to update your Apprenticeship records with this information. Sponsors have the responsibility to sign off work hours and Recommendation for Certification for completion.

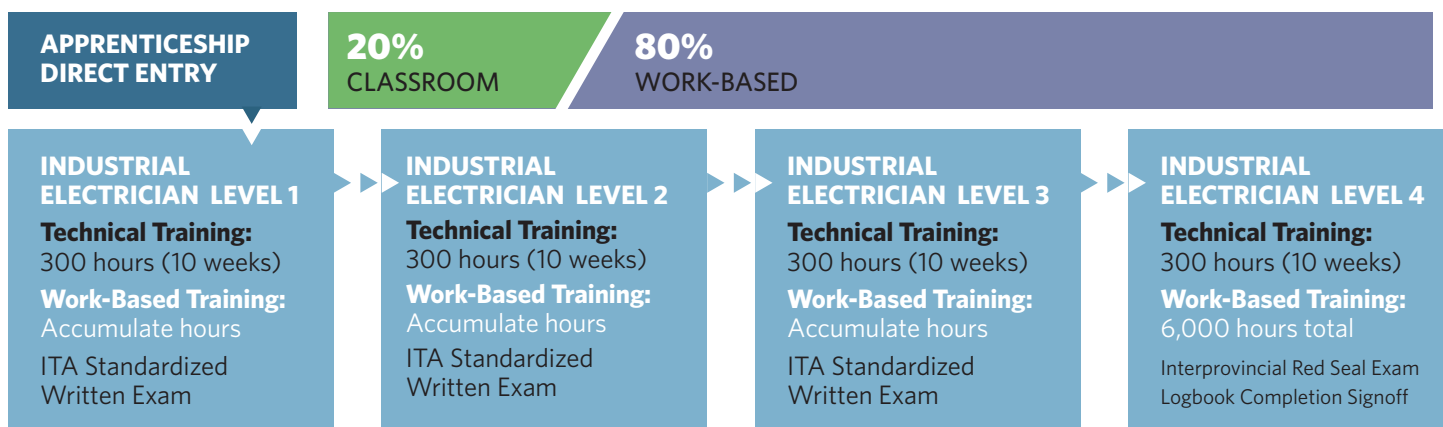
Contact Information – It is your responsibility to ensure your contact information is up to date (address, phone, name changes, etc.) This can be done by logging into Direct Access or phoning Customer Service.

Direct Access – By logging into Direct Access you can view your Apprenticeship records (transcripts, exam marks, etc). www.itabc.ca/apply-apprenticeship/direct-access

Technical Training Registration – Speak with your employer about when will be a good time for you to go back to school for your next level of technical training. Once you and your employer have agreed on a time, it is your responsibility to register for technical training. A list of Designated Training Providers can be found here, www.tradetrainingbc.ca.

It is recommended to have the conversation with your employer and register for technical training ahead of time, as classrooms have limited space.

APPRENTICESHIP PATHWAY - MAPPING YOUR WAY TO CERTIFICATION



Suggested duration based on 30-hour week



GAINING COMPETENCIES

Below are skills and knowledge you will gain from technical and hands on training.

Program competencies can change. Check Program Outline, link below, for accuracy.

www.itabc.ca/sites/default/files/docs/Industrial-Electrician-Outline-Mar-2019-Harmonized.pdf

✓ INDUSTRIAL ELECTRICIAN LEVEL ONE

Apply Circuit Concepts

- Use Electrical Circuit Concepts
- Analyze DC Circuits
- Analyze Principles of Electromagnetism
- Analyze Electronic Circuits

Perform Safety-Related Functions

- Use Personal Protection Equipment (PPE) and Safety Equipment
- Maintain Safe Work Environment
- Perform Lock-out and Tag-out Procedures

Use Tools and Equipment

- Use Measuring and Testing Equipment

Organize Work

- Interpret Plans, Drawings and Specifications
- Use Canadian Electrical Code (CEC)

Use Communication and Mentoring Techniques

- Use Mentoring Techniques

Install and Maintain Consumer/Supply Services and Metering Equipment

- Install Single-phase Consumer/Supply Services and Metering Equipment
- Maintain Single-phase Services and Metering Equipment

Install and Maintain Protection Device

- Install Ground Fault, Arc Fault and Surge Protection Devices

Install and Maintain Low Voltage Distribution Systems

- Install Low Voltage Distribution Equipment

Install and Maintain Bonding, Grounding and Ground Fault Detection Systems

- Install Grounding and Bonding Systems

Install and Maintain Raceways, Cables and Enclosures

- Install Conductors and Cables
- Install Raceways, Boxes and Fittings

Install and Maintain Branch Circuitry

- Install Luminaires
- Install Wiring Devices
- Install Lighting Controls
- Install Lighting Standards

Install and Maintain Communication Systems

- Install Voice/Data/Video (VDV) Systems

✓ INDUSTRIAL ELECTRICIAN LEVEL TWO

Apply Circuit Concepts

- Use Electrical Circuit Concepts
- Analyze Single-Phase AC Circuits
- Analyze Electronic Circuits

Organize Work

- Interpret Plans, Drawings and Specifications

Install and Maintain Consumer/Supply Services and Metering Equipment

- Install Overcurrent Protection Devices
- Install Ground Fault, Arc Vault, and Surge Protection Devices

Install and Maintain Bonding, Grounding and Ground Fault Detection Systems

- Install Grounding and Bonding Systems

Install and Maintain Power Generation Systems

- Install DC Generating Systems
- Maintain DC Generating Systems

Install and Maintain Renewable Energy Generating and Storage Systems

- Install Renewable Energy Generating and Storage Systems

Install and Maintain Transformers

- Install Extra-Low and Low-Voltage Single-Phase Transformers

Install and Maintain Raceways, Cables and Enclosures

- Install Conductors and Cables
- Install Raceways, Boxes and Fittings
- Maintain Conductors, Cables, Raceways, Boxes and Fittings

Install and Maintain Branch Circuitry

- Install Luminaires
- Install Wiring Devices
- Install Lighting Controls
- Maintain Luminaires, Wiring Devices, Lighting Controls, Lighting Standards and Branch Circuitry

Install and Maintain Heating, Ventilating and Air-Conditioning (HVAC) Systems

- Install HVAC Systems and Controls
- Maintain HVAC Systems and Controls

Install and Maintain Exit and Emergency Lighting Systems

- Install Exit and Emergency Lighting Systems
- Maintain Exit and Emergency Lighting Systems

Install and Maintain Cathodic Protection Systems

- Install Cathodic Protection Systems
- Maintain Cathodic Protection Systems

Install and Maintain Motor Starters and Controls

- Install Motor Starters and Controls
- Maintain Motor Starters and Controls

Install and Maintain Motors

- Install DC Motors
- Maintain DC Motors

Install and Maintain Bonding, Grounding and Ground Fault Detection Systems

- Install Grounding and Bonding Systems
- Install Ground Fault Detection Systems

Install and Maintain Power Generation Systems

- Install AC Generating Systems
- Maintain AC Generating Systems

Install and Maintain Transformers

- Install Low-Voltage Three-Phase Transformers
- Install High-Voltage Transformers

Install and Maintain Branch Circuitry

- Install Wiring Devices

Install and Maintain Motor Starters and Controls

- Install Motor Starters and Controls
- Maintain Motor Starters and Controls

Install and Maintain Drives

- Install Drives

Install and Maintain Motors

- Install AC Motors
- Maintain AC Motors

Install and Maintain Renewable Energy Generating and Storage Systems

- Install Renewable Energy Generating and Storage Systems

Install and Maintain High Voltage Systems

- Install High Voltage Systems
- Maintain High Voltage Systems

Install and Maintain Non-Rotating Equipment and Associated Controls

- Install Non-Rotating Equipment and Associated Controls
- Maintain Non-Rotating Equipment and Associated Controls

Install and Maintain Signaling Systems

- Install Fire Alarms Systems
- Install Security and Surveillance Systems

Install and Maintain Communication Systems

- Install Voice/Data/Video (VDV) Systems

Install and Maintain Building Automation Systems

- Install Building Automation Systems

Program and Maintain Automated Control Systems

- Install Automated Control Systems
- Program Automated Control Systems
- Optimize System Performance

Install and Maintain Pneumatic, Hydraulic Control and Pumping Systems

- Install Pneumatic Control Systems
- Install Hydraulic Control Systems
- Install and Maintain Pumping Systems

✓ INDUSTRIAL ELECTRICIAN LEVEL THREE

Apply Circuit Concepts

- Analyze Three-Phase AC Circuits
- Analyze Electronic Circuits

Use Tools and Equipment

- Use Measuring and Testing Equipment

Organize Work

- Interpret Plans, Drawings and Specifications
- Identify Hazardous Locations

Install and Maintain Consumer/Supply Services and Metering Equipment

- Install Three-phase Consumer/Supply Services and Metering Equipment
- Maintain Three-phase Services and Metering Equipment

Install and Maintain Low Voltage Distribution Systems

- Install Low Voltage Distribution Equipment

✓ INDUSTRIAL ELECTRICIAN LEVEL FOUR

Organize Work

- Interpret Plans, Drawings and Specifications

Install and Maintain Power Conditioning, Uninterruptible Power Supply (UPS) and Surge Suppression Systems

- Install Power Conditioning, UPS and Surge Suppression Systems

STANDARDIZED LEVEL EXAMS (SLE)

Standardized Level Exams (SLEs) are usually written on the last day of in-school training and will count for 20% of your overall mark.

Below is a list for general areas of competencies covered in SLEs for each level.

The list of competencies covered in the SLEs can change.

Check the **Exam Weighting Charts** for accuracy at: www.itabc.ca/program/electrician-industrial

LEVEL 1	LEVEL 2	LEVEL 3
<ul style="list-style-type: none"> A. Apply Circuit Concepts B. Perform Safety Related Function C. Use Tools and Equipment D. Organize Work G. Use Communication and Mentoring Techniques H. Install and Maintain Consumer/Supply Services and Metering Equipment I. Install and Maintain Protection Devices J. Install and Maintain Low Voltage Distribution Systems L. Install and Maintain Bonding, Grounding and Ground Fault Detection Systems Q. Install and Maintain Raceways, Cables and Enclosures R. Install and Maintain Branch Circuitry AA. Install and Maintain Communication Systems 	<ul style="list-style-type: none"> A. Apply Circuit Concepts D. Organize Work H. Install and Maintain Consumer/Supply Services and Metering Equipment I. Install and Maintain Protection Devices L. Install and Maintain Bonding, Grounding and Ground Fault Detection Systems M. Install and Maintain Power Generation Systems N. Install and Maintain Renewable Energy Generating and Storage Systems P. Install and Maintain Transformers Q. Install and Maintain Raceways, Cables and Enclosures R. Install and Maintain Branch Circuitry S. Install and Maintain Heating, Ventilating and Air-Conditioning (HVAC) Systems T. Install and Maintain Exit and Emergency Lighting Systems U. Install and Maintain Cathodic Protection Systems V. Install and Maintain Motor Starters and Controls Y. Install and Maintain Motors 	<ul style="list-style-type: none"> A. Apply Circuit Concepts C. Use Tools and Equipment D. Organize Work H. Install and Maintain Consumer/Supply Services and Metering Equipment J. Install and Maintain Lower Voltage Distribution Systems L. Install and Maintain Bonding, Grounding and Ground Fault Detection Systems M. Install and Maintain Power Generation Systems P. Install and Maintain Transformers R. Install and Maintain Branch Circuitry V. Install and Maintain Motor Starters and Controls W. Install and Maintain Drives Y. Install and Maintain Motors

REMINDERS

- You must bring a piece of Government PHOTO identification. The ID must be VALID and CURRENT. Expired IDs and IDs with no expiry date will not be accepted.
- Your Training Provider will inform you of the time and location of the exam. Arrive early.

RED SEAL INTER-PROVINCIAL EXAM (IP)

The Red Seal Inter-Provincial Exam covers a whole range of competencies from all your levels of technical training. The table below is a general breakdown of areas of competencies covered in the Red Seal IP exam. The areas of competencies covered in the Red Seal IP exam can change. Check **IP Table** for a detailed exam breakdown: www.itabc.ca/sites/default/files/program-information/industrial-electrician-ip-table-2016_1.pdf for accuracy.

TASK A Perform Occupational Skills	Task 1	Performs Safety-Related Functions
	Task 2	Uses Tools and Equipment
	Task 3	Organizes Works
	Task 4	Fabricated and Installs Support Components
	Task 5	Commissions and Decommissions Electrical Systems
	Task 6	Uses Communication and Mentoring Techniques
TASK B Installs and Maintains Generating, Distribution and Services Systems	Task 7	Installs, Services and Maintains Consumer/Supply Services and Metering Equipment
	Task 8	Installs, Services and Maintains Protection Devices
	Task 9	Installs, Services and Maintains Distribution Equipment
	Task 10	Installs, Services and Maintains Power Conditioning
	Task 11	Installs, Services and Maintains Bonding, Grounding and Ground Fault Detection Systems
	Task 12	Installs and Maintains Power Generation Systems
	Task 13	Installs and Maintains Renewable Energy Generating and Storage Systems
	Task 14	Installs and Maintains High Voltage Systems
	Task 15	Installs and Maintains Transformers
TASK C Installs and Maintain Wiring Systems	Task 16	Installs and Maintains Raceways, Cables and Enclosures
	Task 17	Installs and Maintains Branch Circuitry and Devices
	Task 18	Installs and Maintains Heating, Ventilating and Air-Conditioning (HVAC) Electrical Components
	Task 19	Installs and Maintains Electric Heating Systems and Controls
	Task 20	Installs and Maintains Exit and Emergency Lighting Systems
	Task 21	Installs and Maintains Cathodic Protection Systems
TASK D Installs and Maintains Motor and Control Systems	Task 22	Installs and Maintains Motor Starters and Control Devices
	Task 23	Installs and Maintains Drives
	Task 24	Installs and Maintains Non-Rotating Equipment and Associated Controls
	Task 25	Installs and Maintains Motors
TASK E Installs and Maintains Signaling and Communications Systems	Task 26	Installs and Maintains Signaling Systems
	Task 27	Installs and Maintains Communication Systems
	Task 28	Installs and Maintains Building Automation Systems
TASK F Installs and Maintains Signaling and Communications Systems	Task 29	Installs and Maintains Input/Output (I/O) Devices
	Task 30	Installs, Programs and Maintains Automated Control Systems
	Task 31	Installs and Maintains Pneumatic and Hydraulic Control Systems


Note: Based on the Industrial Electrician Red Seal Occupational Standard (RSOS).

A copy of the Industrial Electrician RSOS is available at www.red-seal.ca

FINAL PIECE FOR YOUR RED SEAL INTER-PROVINCIAL CERTIFICATION

Once you pass your red seal exam these are the next steps:

1. Ensure your work-based training hours have been submitted and reached achieved status. Check your status in Direct Access.
2. Ensure that your Industrial Electrician Logbook has been completed. Once complete, you and your sponsor and/or assessor will complete the Industrial Electrician Logbook Completion Signoff Form and submit it to ITA. The form can be found here: www.itabc.ca/program/electrician-industrial
3. The Recommendation for Certification (RFC) will be automatically emailed to your Sponsor/Employer. Once received, both the Sponsor and Journeyperson will sign the form and submit to ITA for processing.
4. ITA will verify and process the RFC, the Certificates will then be printed for mailing.
 - Certificates are mailed to your Sponsor.
 - If your Sponsor had indicated on the RFC form to send Certificates to the Apprentice, they will be mailed to the address noted on your Apprenticeship record in Direct Access.



ITA Customer Service
 800 8100 Granville Avenue,
 Richmond, BC V6Y 3T6
 Tel 778-328-8700
 Toll Free: 1-866-660-6011
 Fax 778-328-8701
customerservice@itabc.ca

RECOMMENDATION FOR CERTIFICATION FORM

This form is to recommend for certification an apprentice who has completed the requirements of a program. Please complete section A and return the completed signed form to us at customerservice@itabc.ca. Missing information may delay the process.

Sponsor Information:	
Organization: ABC123 Electrical LTD.	Org ID: 123456
Address: 4321 ABEC Street Vancouver, V3B2G2	Primary Contact: Pat Jones
	Email Address: patjones@abccom.com

Apprentice Information:	
Full Legal Name: Jessie Lee	ITA ID# 654321
Program: Residential Electrician	Email Address: leeessie@123email.com

Section A: Recommendation for Certification By Sponsor (and Certified Journeyperson or individual with Supervision and Sign-off Authority)

RELEASE OF CERTIFICATES sent to the sponsor directly unless indicated otherwise. Apprentice check address in DA.
 Send to Sponsor Send to Apprentice

SPONSOR	JOURNEYPERSON
<p>I/We hereby confirm that the trainee/apprentice named above is working at the skill and competency level of a certified journeyperson and recommend certification.</p> <p>Bob Smith (Signed) Name</p> <p>Jan 1, 2016 Date Signed</p> <p><small>Please note: The Certified Journeyperson or the individual with Supervision and Sign-off Authority (who supervised this apprentice) must always sign this form. The Certified Journeyperson or the individual with Supervisor and Sign-off Authority must provide all the details requested in the box to the right and must be certified at the same level or higher than the apprentice or in another approved trade that is recognized by ITA as having similar competencies.</small></p> <p>CERTIFICATION NOT RECOMMENDED BY SPONSOR: I/We hereby confirm that the apprentice named above is NOT recommended for certification at this time. Please fill out an RFC Form B to complete this recommendation.</p> <p><i>[Signature]</i> Sponsor Signature Date</p>	<p>Print Full Name of the Certified Journeyperson or individual with Supervision and Sign-Off Authority who has supervised this apprentice and is recommending him/her certification (may be same as Sponsor, or a different individual)</p> <p>Jason Jones Name</p> <p><i>[Signature]</i> Signature</p> <p>Jan 1, 2016 Date Signed</p> <p>Residential Electrician Trade Name Province Issued</p> <p>Certificate Number (below): 12345AB01</p> <p><input type="checkbox"/> Certificate of Qualification <input type="checkbox"/> ITA Sign-off Authority <input type="checkbox"/> Interprovincial (Red Seal)</p> <p><small>If the Journeyperson's credential was awarded outside of BC attach a copy of the certificate or wallet card.</small></p>

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FREQUENTLY ASKED QUESTIONS

HOW DOES MY SPONSOR/EMPLOYER SUBMIT HOURS?

The sponsor/employer will submit Work Based Training Hours via Direct Access, email, mail, or fax.

WHAT IF I WORKED FOR A SPONSOR/EMPLOYER AND THEY DID NOT SUBMIT MY HOURS?

You can talk to your current sponsor to see if they are willing to submit the hours for the work you did previously on a work based training report.

DOES MY SPONSOR/EMPLOYER HAVE TO LET ME GO TO SCHOOL?

You need to discuss your plans for school with your sponsor/employer to see if they are able to release you to go to school. Let them know of upcoming training locations and dates.

HOW DO I KNOW WHAT MY GRADES ARE FOR SCHOOL?

The Trades Training school will submit your marks to ITA. You and your sponsor/employer will receive a notice by email.

WHERE DO I GET MY PROGRESSION LETTER?

Upon completion of your technical training and required work-based hours for Level 1 and 2, ITA will send you the Progression Letter by email. Required number of work place hours by level can be found at

www.itabc.ca/grants-tax-credits/grants

You will need this Progression Letter to apply for your Apprenticeship Incentive Grant.

www.servicecanada.gc.ca/eng/goc/apprenticeship/incentivegrant/program.shtml

WHEN I FINISH ALL MY TRAINING AND REQUIRED HOURS, AM I CERTIFIED?

No, first ITA will email the Employer Recommendation for Certification document to your sponsor after you have passed the Red Seal Inter-Provincial Exam. This must be signed by a certified tradesperson (your trade) and returned to ITA. ITA will send your Certificate of Apprenticeship, Certificate of Completion and Interprovincial Red Seal Endorsement certificates to your sponsor/employer.

ARE THERE ANY GRANTS FOR FINISHING MY CERTIFICATION?

Yes. You can apply for the Apprenticeship Completion Grant once you receive your Red Seal Inter-Provincial Endorsement Certificate. You will need a copy of your certificates to apply.

www.servicecanada.gc.ca/eng/goc/apprenticeship/completiongrant/application.shtml

ARE THERE ANY INCENTIVES FOR MY EMPLOYER?

Employers can apply for Tax Credits as their apprentice progresses through the trade. The tax information letter can be found on Direct Access.

WHERE CAN I FIND MY LOGBOOK?

You can find your logbook on the Industrial Electrician trade page on our website:

www.itabc.ca/program/electrician-industrial

FINANCIAL SUPPORT FOR APPRENTICES

As a registered apprentice, you can apply for financial support. You're also eligible to apply for Employment Insurance. Federal and provincial financial support information can be found in the two links below:

www.itabc.ca/grants-tax-credits/grants

www.esdc.gc.ca/en/reports/apprentices/support_brochure.page

Apprentice Supports*	Direct Entry Apprenticeship Hired and registered by Sponsor without prior Foundation/ apprentice training	Foundation Training (a.k.a: pre-apprentice)	Apprentice Technical Training (Levels 1, 2, 3, 4)
Skills Training Funding Tuition* See Notes A+C		✓	
Indigenous Skills Training Funding Tuition* (eligible Indigenous applicants) ISETS agencies See Notes A+C		✓	✓
Student Aid/Loans* Only Foundation Training over 12 weeks long BC ACCESS Grant (only for training in high demand trades) Bursaries and Scholarships		✓	
Canada Apprentice Loan			✓
Wage Subsidy (new hires)* WorkBC / ISETS agencies	✓		
Other Resources* STEP See Note D	✓		
EI and AOP: Apprentice Financial Benefits for Apprentice Training * (Apprentice Supports Online Portal) WorkBC and Service Canada (for EI-eligible clients) ²			✓
Training Tax Credits Non-Red Seal and Red Seal* Credit amount varies, please refer to CRA			✓
Incentive and Completion Grants, Red Seal Trades* Service Canada		✓	✓
ITA Website Resources* (www.itabc.ca) Direct Access Online Apprenticeship Reporting Trade Profile	✓	✓	✓

*Support is dependent on eligibility and varies by trade, level of training, and whether or not it is a Red Seal or Non-Red Seal trade.

Note A: WorkBC and Indigenous resources: ISETS agencies, Victoria Foundation, Bands, bursaries, scholarships, STEP

Note B: Bursaries may be available through individual training institutions

Note C: Youth Work in Trades and Youth Train in Trades coordinated through School Districts

Note D: Skilled Trades Employment Program (STEP) is available in several communities to assist Canadians in entering trade careers.

CONNECT WITH US!

www.itabc.ca



CONTACT EMAIL OR CALL

778.328.8700 or call TOLL FREE in BC: 1.866.660.6011

customerservice@itabc.ca

Our customer experience representatives are accessible, from 8:00 a.m. to 4:30 p.m. PT, Monday to Friday, and can provide you with quick and easy access to information regarding all of ITA's services. Call or email us today for information on training and apprenticeship, including registration, examinations and certification, or to answer any other questions you may have.



CONNECT LOCALLY

Looking for someone to help you in your community? ITA has regional Apprenticeship Advisors across the province to support local skilled trades apprentices and employers. Find the Apprenticeship Advisor closest to you—all you need is your postal code.

Do you want to learn more about how ITA works with industry? Feel free to contact any of our Industry Relations Team to better understand each industry's needs in BC and to learn more about how they are working to ensure we have the right skilled workers where they are needed.



VISIT CUSTOMER CENTRE

ITA's Customer Support Centre

8th Floor - 8100 Granville Avenue, Richmond, BC V6Y 3T6

We are happy to serve you in-person at our Richmond Customer Support Centre, and through our regional Apprenticeship Advisors, who are available to serve you in communities across the province.



SUBSCRIBE TO TRADES TALK

Keep up to date on ITA in action as well as other trades and industry news by subscribing to our quarterly newsletter, Trades Talk.



Industry Training Authority



@ita_bc



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ITA BC

