

Electrician

Electricians install, alter, repair and maintain electrical systems designed to provide heat, light, power, control, signal or fire alarms for all types of buildings, structures and premises.

In general, electricians:

- Read and interpret electrical, mechanical and architectural drawings and electrical code specifications to determine wiring layouts
- Cut, thread, bend, assemble and install conduits and other types of electrical conductor enclosures and fittings
- Pull wire through conduits and holes in walls and floors
- Position, maintain and install distribution and control equipment such as switches, relays, circuit breaker panels and fuse enclosures
- Install, replace, maintain and repair electrical systems and related electrical equipment
- Install data cabling
- Splice, join and connect wire to form circuits
- Test circuits to ensure integrity and safety
- Install and maintain fibre optic systems
- Some electricians specialize in specific types of installations:
 - Residential (housing developments)
 - Commercial (office buildings)
 - Institutional (hospitals)
 - Industrial (plants, factories)

Working Conditions

Electricians may be involved in construction or maintenance, or do a variety of electrical work. Electricians usually work a 40-hour, five-day week plus overtime when required. Especially in construction, there may be no guarantee of permanent work. Working conditions can change dramatically from one job to another, varying from



indoors in clean conditions to outdoors on scaffolding, to indoors in cramped conditions.

There is some risk of injury from accidental electric shock.

Skills and Abilities

To be successful in their trade, electricians need:

- Good communication and reading skills
- An aptitude for Mathematics
- Mechanical ability, strength and manual dexterity
- The ability to distinguish colours to work with colour-coded wiring
- The ability to work at heights
- The ability to lift between 11 and 25 kilograms
- The ability to get along well with co-workers
- The willingness to keep up with new developments in the field
- The ability to create new ways of doing things
- The ability to do very precise work expertly, and
- Ability to work at a variety of exciting tasks

Those who install or maintain equipment in existing homes or businesses also must be neat, friendly and able to deal with customers courteously.

Employment and Advancement

Electricians work for construction and maintenance contractors, manufacturers, resource companies, and other large organizations. Electricians in the construction industry may experience layoffs between projects and when the industry is in a slump.

They must be willing to go where the work exists. Membership in a trade union is voluntary; however, some contractors employ only union people.

Journeyman wage rates vary, but generally range from **\$25 to \$40 an hour plus benefits**.

Electricians may advance to positions such as foreman, superintendent, estimator or electrical inspector. Some electricians start their own contracting businesses. In Alberta, a valid Master Electrician Identification Number is required in order to pull electrical work permits. Alberta-certified electricians may apply to the Alberta Safety Codes Council to become Master Electricians following three years of certification.



Working in Alberta

To work as an Electrician in Alberta, a person must be a registered apprentice, an Alberta-certified journeyperson, or hold a valid recognized credential.

Electricians learn their skills by registering with Alberta Apprenticeship and Industry Training to participate in apprenticeship training. Upon successful completion, they are awarded the Alberta Journeyman Certificate.

An electrician who holds a valid trade certificate from Alberta or from another Canadian province or territory may apply to write the Interprovincial Exam and, if successful, be granted a Red Seal under the Interprovincial Standards Red Seal Program. The Red Seal is recognized throughout most of Canada.

An electrician who holds a valid recognized credential that does not have a Red Seal may apply for:

- an Alberta trade certificate under the Qualification Certificate Program
- an Alberta Equivalency document under the Equivalency Program.

Electricians who:

- Hold a credential that is not recognized or is no longer valid in an Alberta-designated trade, OR
- Can demonstrate their experience, skills and knowledge in an Alberta-designated trade, and meet the standards and requirements established by the Alberta Apprenticeship and Industry Training Board may be eligible to apply for trade certification under the Qualification Certificate Program

Individuals possessing a valid Alberta Journeyman Certificate, an Alberta Qualification Certificate, an Alberta Occupational Certificate, or a valid recognized credential are eligible to receive a Blue Seal business credential after completing the necessary requirements.

Apprenticeship Training

The term of apprenticeship for an electrician is 4 years (four 12-month periods) including a minimum of 1500 hours of on-the-job training and 8 weeks of technical training in each of the first three years, and a minimum of 1350 hours of on-the-job training and 12 weeks of technical training in the fourth year.



- An applicant, who previously completed courses of study or work experience related to the Electrician trade or holds a related journeyperson certificate and has the employer's recommendation, may qualify for credit that could reduce the term of apprenticeship
- A person who has previous training or work experience in the trade and wants to determine their level of skill and knowledge for entry or advanced standing in an apprenticeship program may apply for a Prior Learning Assessment
- A high school student can become an apprentice and gain credits toward apprenticeship training and a high school diploma at the same time under the Registered Apprenticeship Program (RAP)

To learn the skills required of an Electrician in Alberta and be issued an Alberta Journeyman Certificate, a person must:

- Satisfy the entrance requirements or pass the entrance exam find a suitable employer who is willing to hire and train an apprentice
- *Most employers prefer to hire high school graduates and may select apprentices from among their current employees.*
- With their employer, complete the Apprenticeship Application and Contract and submit it to an Apprenticeship and Industry Training Office
- Pay the non-refundable application fee as identified on the application noted above
- Complete the required on-the-job training
 - during on-the-job training, apprentice electricians earn at least 50 percent of the journeyperson wage rate in their place of employment in the first year, 60 percent in the second, 70 percent in the third, and 80 percent in the fourth year.
- Complete the required technical training each year (see Course Outline)
- Enroll in technical training (see Technical Training Centre)
 - select an educational institution that offers training for Electrician apprentices, and a time to attend training
 - determine requirements for enrolling at the selected institution, and forward completed enrollment form to the selected institution
- Review books and materials required for training (see Textbook and Resource List)
- Successfully complete all required exams (see Exam Counselling Sheets)
 - review the Apprenticeship and Industry Training Policy on Cheating



- Apprentices may attempt the Interprovincial Exam in the final period of their apprenticeship training and, if successful, be granted a Red Seal. (see Exam Counselling Sheets)
- Review the Apprenticeship and Industry Training Policy on Cheating
- When apprentices attend technical training, they are required to pay the applicable tuition fee and purchase course supplies
- Grants, scholarships and other financial assistance may be available. More information is available at www.alis.gov.ab.ca or by contacting an Apprenticeship and Industry Training Office

Interprovincial Standards Red Seal Program

To qualify for a Red Seal, a person must:

- Hold a valid trade certificate in a trade that participates in the Interprovincial Standards Red Seal Program:
 - an Alberta trade certificate or completion of apprenticeship certificate, OR
 - a journeyperson or completion of apprenticeship certificate issued by another Canadian province or territory
- For applications based on Alberta certificates
 - complete the Interprovincial (Red Seal) Examination Application - Alberta Certified (no application fee is required)
 - submit the application to an Apprenticeship and Industry Training Office
- For applications based on non-Alberta certificates
 - complete the Qualification Certificate – Recognized Credential Application
 - submit the application to an Apprenticeship and Industry Training Office
 - pay the non-refundable application fee as identified on the application form
- Prepare for the exam (see Exam Counselling Sheets)
 - review the Apprenticeship and Industry Training Policy on Cheating
 - review available resource materials (see Resource Materials - Electrician)
- Successfully complete the required exam



Equivalency Program

To qualify for an Equivalency document based on a recognized credential, a person must:

- Have a valid recognized credential that does not have an Interprovincial Standards Red Seal
- Complete the Equivalency Application and deliver it in person to an Apprenticeship and Industry Training Office. Government issued photo identification is required.
- Pay the non-refundable application fee as identified on the application noted above

A person who holds a valid recognized credential, as described above, does not require an Alberta Equivalency document to work in the trade in Alberta. However, some employers may require Alberta documentation as proof that the holder is allowed to work in the trade or that the holder's credential is recognized.

Qualification Certificate Program

To qualify for a Qualification Certificate *based on a recognized credential*, a person must:

- Hold a valid recognized credential that does not have an Interprovincial Standards Red Seal
- Complete the Qualification Certificate – Recognized Credential Application and submit it to an Apprenticeship and Industry Training Office.
- Pay the non-refundable application fee as identified on the application noted above
- Prepare for the exam(s)
 - review the Apprenticeship and Industry Training Policy on Cheating
 - review available resource materials (see Resource Materials - Electrician)
- Successfully complete the required exam(s)

To qualify for an Alberta Qualification Certificate *based on work experience*, a person must:

- Have at least 8,775 hours and 72 months of 'hands-on' work experience as an electrician



- *Time spent on supervisory or foreman duties, counter work, heading the tool crib, or on a training course is NOT counted as 'hands-on' work experience.*
- Complete the Qualification Certificate - Work Experience Application (and review the Application Guide) and submit it to an Apprenticeship and Industry Training Office
- Pay the non-refundable fees as identified on the application noted above
- *This application fee covers the review of the application, the assessment and confirmation of the applicant's work experience hours/months, the administration of the applicant's demonstration of competency, and one attempt at the Qualification Certificate theory examination. The Qualification Certificate practical examination requires a separate fee as identified on the application noted above.*
- Prepare for the exam(s)
 - review the Apprenticeship and Industry Training Policy on Cheating
 - review available resource materials (see Resource Materials - Electrician)
- Successfully complete the required exam(s)

