

# ELECTRICAL TECHNIQUES - INDUSTRIAL ELECTRICIAN APPRENTICESHIP

**Program:** EIAP

**Credential:** Ontario College Certificate

**Delivery:** Full-time

**Work Integrated Learning:** Apprentice Placement

**Length:** 840 hours

**Effective:** Fall 2024

**Location:** Midland

## Description

The Electrical Techniques - Industrial Electrician Apprenticeship program prepares apprentices to install, maintain and repair highly sophisticated electrical equipment in an industrial setting. Apprentices explore principles and applications of instrumentation control systems; programmable controllers; electronics, schematics and blueprint interpretation; safety and circuit; and component troubleshooting.

## Career Opportunities

Industrial electricians install, maintain, test, troubleshoot and repair industrial electrical equipment and associated electrical and electronic controls. They are employed by electrical contractors and maintenance departments of factories, plants, mines, shipyards and other industrial establishments.

## Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. assist in the interpretation and preparation of electrical drawings including other related documents and graphics;
2. analyze and solve simple technical problems related to basic electrical systems by applying mathematics and science principles;
3. use and maintain test and instrumentation equipment;
4. assemble basic electrical circuits and equipment to fulfill requirements and specifications under the supervision of a qualified person;
5. assist in the installation and troubleshooting of basic electrical machines and associated control systems under the supervision of a qualified person;
6. assist in testing and troubleshooting electrical and electronic circuits, equipment, and systems by using established procedures under the supervision of a qualified person;
7. assist in the troubleshooting of control systems under the supervision of a qualified person;
8. use computer skills and tools to solve basic electrical related problems;

9. assist in conducting quality assurance procedures under the supervision of a qualified person;
10. assist in the preparation and maintenance of records and documentation systems;
11. install and assist in testing telecommunication systems under the supervision of a qualified person;
12. apply health and safety standards and best practices to workplaces;
13. perform tasks in accordance with relevant legislation, policies, procedures, standards, regulations, and ethical principles;
14. apply basic electrical cabling requirements and install and test system grounding for a specified number of applications under the supervision of a qualified person;
15. identify problems and troubleshoot electrical systems under the supervision of a qualified person;
16. assist in the selection of electrical equipment, systems and components to fulfill the requirements and specifications under the supervision of a qualified person;
17. install and troubleshoot power generating and distribution systems and associated equipment under the supervision of a qualified person;
18. install and troubleshoot rotating equipment and associated control systems under the supervision of a qualified person;
19. install and troubleshoot motor drives and associated control systems under the supervision of a qualified person.

## External Recognition

Upon successful completion of their Level 3 in-school training, apprentices must complete the remainder of their 8,160 hours of on-the-job training to become competent in the required skills (as outlined in the Apprenticeship Training Standard) and qualify for their Apprenticeship Certificate. Thereafter, they are eligible to write their Certificate of Qualifications exam. Graduates may be able to receive credit toward further education in related postsecondary diploma, advanced diploma, or degree programs.

## Admission Requirements

- Ontario Secondary School Diploma (OSSD) or equivalent, mature student status
- Apprentices have to be registered with the Ministry of Labour, Training, and Skills Development

## Additional Information

An apprenticeship involves practical training provided on-the-job by a skilled worker, or trainer. The skills or competencies to be developed are set out by the trade's Apprenticeship Training Standard and are recognized by the industry as being essential to the practice of the trade.

As these essential skills are developed, the apprentice's sponsor or trainer signs the relevant sections of the training standard to indicate that the apprentice has met the individual training objectives by

demonstrating the skills required of a skilled worker, or journey person, in the trade.

## Graduation Requirements

Students must successfully complete all three levels to receive a certificate.

- Electrician Level 1- Basic (EIAB)
- Electrician Level 2- Intermediate (EIAI)
- Electrician: Industrial Electrician Apprenticeship Level 3- Advanced (EIAA)

## Graduation Eligibility

Students must successfully complete all required courses as noted below. Further details, if applicable, are noted under "Additional Information" above.

## Program Tracking

### Level 1- Basic (EIAB)

Program Courses		Hours
ELAB 1000	Canadian Electrical Code	33
ELAB 1001	Prints	30
ELAB 1002	Electrical Theory	63
ELAB 1003	Installation Methods	48
ELAB 1004	Instrumentation	24
ELAB 1005	Electronics	42
<b>Hours</b>		<b>240</b>
<b>Total Hours</b>		<b>240</b>

### Level 2- Intermediate (EIAI)

Program Courses		Hours
EIAI 1000	Canadian Electrical Code - Intermediate	39
EIAI 1001	Prints - Intermediate	30
EIAI 1002	Electrical Theory - Intermediate	81
EIAI 1003	Installation Methods - Intermediate	39
EIAI 1004	Instrumentation - Intermediate	42
EIAI 1005	Electronics - Intermediate	39
EIAI 1006	Monitoring and Communication Systems	30
<b>Hours</b>		<b>300</b>
<b>Total Hours</b>		<b>300</b>

### Level 3- Advanced (EIAA)

Program Courses		Hours
ELAA 1000	Canadian Electrical Code - Advanced	30
ELAA 1002	Electrical Theory - Advanced	60
ELAA 1003	Installation Methods - Advanced	81
ELAA 1004	Instrumentation - Advanced	39
ELAA 1005	Fluid Power	30
ELAA 1006	Electronics - Advanced	60
<b>Hours</b>		<b>300</b>
<b>Total Hours</b>		<b>300</b>

Code	Title
ELAA 1007	Electrician-Inds App Exam Prep

ongoing basis to ensure relevance to changing educational objectives and employment market needs.

Program outlines may be subject to change in response to emerging situations, in order to facilitate student achievement of the learning outcomes required for graduation. Components such as courses, progression, coop work terms, placements, internships and other requirements may be delivered differently than published.

**Disclaimer:** The information in this document is correct at the time of publication. Academic content of programs and courses is revised on an