ECC1 – Electrician Common Core Level 1

Trades

Effective Term & Year: Fall 2022
Program Outline Review Date: 2024-09-01

Program Area: Trades Apprenticeship Training

Description:

This 10-week Electrician Common Core Level 1 program delivers the skills, knowledge and training required for the 4-level Construction Electrician program or the Industrial Electrician program. Program competencies include applying circuit concepts, analyzing DC circuits and electromagnetism, using measuring and testing equipment, interpreting plans and drawings, using the Canadian Electrical Code, installing and maintaining single phase consumer/supply metering equipment, installing surge protective devices, ground fault and arc fault detection systems, installing low voltage distribution systems and grounding and bonding systems, installing conductors, cables, raceways, boxes , fittings, luminaries, wiring devices and lighting controls and standards and voice/data/video systems. This program includes classroom theory, demonstrations and practical hands-on training in a state-of the art electrical concepts lab as well as in the electrician shop. Safe work habits are important in this trade and are emphasized, reinforced and practiced throughout the program.

Credentials Granted:

Upon successful completion of the 10-week Level 1 Electrician Common Core Program, students receive:

- Level 1 technical training credit for the Construction Electrician or Industrial Electrician Apprenticeship programs.

Delivery Methods: Hybrid (Face-to-Face and Online)

Program Duration: 10 weeks

Instructional Activity and Hours:

Activity	Hours
Instructional Hours (hrs/wk)	28 hrs/wk
Directed Studies (hrs/wk)	2 hrs/wk
Total (hrs/wk)	30 hrs/wk
Total Program Hours	300 Hours

Content Weighting:

Activity	Percentage
Theory	90%
Practical Skills	10%

Admission Requirements:

Sponsored electrician apprentice

Flexible Assessment:

Credit cannot be awarded for this program through Flexible Assessment.

Program Transfer Credit:

For information about block transfer agreements between programs in British Columbia, Alberta, and elsewhere, please visit http://www.cotr.bc.ca/transfer.

To minimize transfer issues, check with an academic advisor at the institution that will receive the transfer credits.

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Program Outline Effective Date the following textbooks were in use (most current edition):

Canadian Electrical Code 2018 ; BC Amendments, BC Bulletins, Others as requested.(available

through BCSA)

L*evel 1 Exercise Booklet,* BCIT

Electrician Level 1 Custom Bundle, Nelson Publisher

Please see the instructor's syllabus or check COTR's online text calculator

https://textbook.cotr.bc.ca/ for a complete list of the currently required textbooks.

Program Competencies and Technical Training Content:

Upon the successful completion of this program, students will be able to:

ELEA 101 Apply Circuit Concepts

- Use electrical circuit concepts
- Analyze DC Circuits
- Analyze principles of electromagnetism
- Analyze electronic circuits

ELEA 102 Perform Safety-Related Functions

- Use personal protective equipment (PPE) and safety equipment
- Maintain safe work environment
- Perform lock-out and tag-out procedures

ELEA 103 Use Tools and Equipment

- Use measuring and testing equipment

ELEA 104 Organize Work

- Interpret plans, drawings and specifications
- Use Canadian Electrical Code (CEC)

ELEA 105 Use Communication and Mentoring Techniques

- Use mentoring techniques

ELEA 106 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

ELEA 107 Install and Maintain Protection Devices

- Install ground fault, arc fault, and surge protection devices

ELEA 108 Install and Maintain Low Voltage Distribution Systems

- Install low voltage distribution equipment

ELEA 109 Install and Maintain Bonding, Grounding and Ground Fault Detection Systems

- Install grounding and bonding systems

ELEA 110 Install and Maintain Raceways, Cables and Enclosures

- Install conductors and cables
- Install raceways, boxes and fittings

ELEA 111 Install and Maintain Branch Circuitry

- Install luminaries
- Install wiring devices
- Install lighting controls
- Install lighting standards

ELEA 112 Install and Maintain Motor Starters and Controls

- Install motor starters and controls
- Maintain motor starts and controls

ELEA 113 Install and Maintain Communication Systems

- Install voice/data/video (VDV) systems

Evaluation and Assessment:

ELECTRICIAN COMMON CORE LEVEL 1

COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
ELEA 101	Apply Circuit Concepts	50%	40%
ELEA 102	Perform Safety-Related Functions	3%	10%
ELEA 103	Use Tools and Equipment	2%	10%
ELEA 104	Organize Work	3%	0%
ELEA 105	Use Communication and Mentoring Techniques	0%	0%
ELEA 106	Install and Maintain Consumer/Supply Services and Metering Equipment	5%	0%
ELEA 107	Install and Maintain Protection Devices	4%	0%
ELEA 108	Install and Maintain Low Voltage Distribution Systems	5%	0%

ELEA 109	Install and Maintain Bonding, Grounding and Ground Fault Detection Systems	4%	0%
ELEA 110	Install and Maintain Raceways, Cables and Enclosures	8%	0%
ELEA 111	Install and Maintain Branch Circuitry	6%	15%
ELEA 112	Install and Maintain Motor Starters and Controls	8%	10%
ELEA 113	Install and Maintain Communication Systems	2%	15%
	Total	**100%**	**100%**

In-School Theory/Practical Subject Competency Weighting	90%	10%
Final in-school percentage score	**IN-SCHOOL %**	
In-School Percentage Score Combined theory and practical subject competency multiplied by	80%	
Standard Level Exam Percentage Score The exam score is multiplied by	20%	
Final Percentage Score	**FINAL%**	

Pass Requirements:

In order to pass this program, students are required to

- achieve a minimum overall 70% final percentage score

Students must provide their own:

- linesman pliers
- diagonal cutters
- hacksaw
- wire strippers
- Phillips screwdriver
- slotted screwdriver
- Robertson screwdriver
- torpedo level
- knife
- tape measure
- channel lock pliers
- 6" crescent wrench
- personal digital multimeter minimum 10MW/v

Academic Policies:

College of the Rockies policies related to courses can be found at https://cotr.bc.ca/about-us/college-policies/ and include the following:

- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.4.8 Academic Performance
- Policy 2.5.3 Grade Appeal
- Policy 2.4.9 Student Concerns Re Faculty

Program Grade

COM	NCG
Completed to the defined standard – 70% or greater	No Credit Granted – less than 70%

Program Changes:

Information contained in program outlines is correct at the time of publication. Content of the program is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add material to programs.

Industry Training:

The program competencies and technical training content delivered in this program follow the SkilledTradesBC Program Outline for this trade.

Safety Catalog:

WorkSafeBC regulations apply to all trades programs. Students are expected to follow all safe work practices and have high regard for the safety of others as well as of themselves. Students are responsible to wear personal protective equipment (PPE) as directed. At a minimum, students must provide and wear approved safety footwear and eyewear at all times in the shop. Additional PPE may be required for specific tasks. Students are expected to wear clothing suitable for working safely in the shop.