First Period Technical Training

- Electrician -

(8 Weeks @ 30 Hours per Week = 240 hours)

Instructor(s):

Office Hours:
Monday through Friday: 8:00 AM – 4:30 PM

Jason Lalonde - Chair
  Office CC117 – Clearwater Campus
  Office Phone 780-791-4908
  jason.lalonde@keyano.ca

Kyle Forrest - Instructor
  Office CC117 – Clearwater Campus
  Office Phone 780-792-5736
  kyle.forrest@keyano.ca

Patricia Luedee - Instructor
  Office CC117 – Clearwater Campus
  Office Phone 780-715-3912
  patricia.luedee@keyano.ca

Dawn Ohama - Instructor
  Office CC117 – Clearwater Campus
  Office Phone 780-792-5068
  dawn.ohama@keyano.ca

Tim Thomas - Instructor
  Office CC117 – Clearwater Campus
  Office Phone 780-792-5612
  tim.thomas@keyano.ca

Tim Weldon - Instructor
  Office CC117 – Clearwater Campus
  Office Phone 780-792-5123
  timothy.weldon@keyano.ca

Required Textbooks: (available at Keyano College Bookstore approximately 2 weeks prior to start date)

First Period Electrician Apprenticeship ILMs w/supplemental texts
Alberta Learning
Edmonton: Author, 1998–, SKU 2000308

2018 Canadian Electrical Code*, Part I, 24th edition*
Canadian Standards Association
Rexdale: Canadian Standards Association, 2018, ISBN 9781488313431

Optional References:

Direct Current Fundamentals, 8th edition
Herman, Stephen L.
Thomson: Delmar, ISBN 978-1111127466

IPT's Electrical Handbook
Putz, Herb
IPT Publishing and Training, Ltd, 2008, ISBN 978-0920855980

Electrician Program Supplies (Required for all periods):

- 3-ring binders, dividers, and lined paper
- 6 or 12 inch ruler
- Pens, pencils, highlighters, erasers
- Calculator (with no programmable memory; Sharp 520W, 520X, 520XT or 546XT are recommended)
- CSA approved safety boots
- Safety goggles
- Gloves (Mechanix are recommended)
- Electrical stencils are recommended
- Although classes are scheduled in person, we ask that all students are prepared with the technology required for virtual classes (online) should it become necessary; Computer/laptop, microphone, camera and internet access.

Course Description:

In the First Period Technical Training you will learn about:

1. Standard & Specific Workplace Safety
2. Circuit Fundamentals
3. EMF Sources
4. Lab Fundamentals
5. Canadian Electrical Code Part I and Drawings

Learning Outcomes

Upon successful completion of Section One – *Standard & Specific Workplace Safety* **– you will be able to:**

1. Apply legislation, regulations and practices ensuring safe work in this trade.
2. Use industry standard practices for climbing, lifting, rigging and hoisting in this trade.
3. Apply industry standard practices for hazardous materials and fire protection in this trade.
4. Manage an apprenticeship to earn journeyman certification.
5. Apply safe work practices for electricians.

Upon successful completion of Section Two – *Circuit Fundamentals* **– you will be able to:**

1. Solve trade-related problems using basic mathematical skills.
2. Predict how changes in the value of voltage, current or resistance affects the circuit.
3. Connect and analyze a series resistive circuit.
4. Connect and analyze parallel resistive circuit.
5. Connect and analyze series-parallel resistive circuits.
6. Connect and analyze an Edison 3-wire system.
7. State and analyze the relationship between work, energy, power and efficiency.

Upon successful completion of Section Three – *EMF Sources* **– you will be able to:**

1. Identify the methods of producing Electromotive Force (EMF).
2. Identify the requirements for installation and maintenance of batteries.
3. State the characteristics of magnetic and electromagnetic materials.
4. Explain the generation of electricity in ac and dc generators.

Upon successful completion of Section Four – *Lab Fundamentals* **– you will be able to:**

1. Use electrical meters to measure circuit properties.
2. Identify the properties of conductors, semiconductors insulators and fibre optic cables.
3. Splice, tap and terminate conductors.
4. Identify resistor types and ratings.
5. Design and connect switching circuits using schematic and wiring diagrams.
6. Connect and analyze relay control circuits.
7. Connect and analyze extra low voltage switching circuits.
8. Connect and analyze alarm systems and smoke alarms.

Upon successful completion of Section Five – *Canadian Electrical Code (CEC) Part I and Drawings* **– you will be able to:**

1. Recognize the purpose and organization of the Canadian Electrical Code Part I and the Alberta Electrical STANDATA.
2. Interpret the general rules in Section 2 of the CEC.
3. Determine the conductors required for installations in Section 4 of the CEC.

4. Determine the components, installation methods, grounding and bonding for a single dwelling.
5. Determine the loading on services, feeders and branch circuits for single dwellings.
6. Determine installation wiring methods.
7. Determine electrical requirements for a residential occupancy.
8. Determine code requirements for lighting equipment.
9. Determine the code requirements for Class 1 and Class 2 circuits.
10. Interpret orthographic projections, block, wiring and schematic diagrams.
11. Interpret construction drawings.
12. Interpret residential electrical construction drawings.

Grading

Apprentices must successfully meet three criteria to pass technical training.
1. Minimum 65% Theory Component (cumulative weighted average)
2. Minimum 65% on each Practical Component
3. Minimum 50% on every section of study.

Std Wkpl Safety & EMF Sources	16%
Circuit Fundamentals	32%
Lab Fundamentals	26%
Code Part 1 & Drawings	26%
Total Theory Component	**100%**
Lab/Shop	100%
Total Practical Component	**100%**

E-Learning

Technology and internet will impact your online learning experience. It's important that you are able to watch an online video and other course materials, take online quizzes, and participant in a live class with your instructor and other students.

Keyano College operates in a Windows based environment and having the correct tools for online learning is important. Here's a list of recommended system requirements:

Internet Speed

Minimum Internet speeds of 5 Mbps.
Recommended Internet speeds of 25 Mbps (especially if you are sharing your internet at home). Check your internet speed with Fast.com.

System requirements:

Microsoft Windows	Apple
Minimum Requirements: A Windows 10 **computer/laptop** · Minimum 4GB of RAM. · 10GB+ available hard drive storage. · Enough available hard drive space to install the Microsoft Office suite (approximately 3GB). Microsoft Office software is free to all Keyano students and employees. · Microphone, webcam and speakers. A headset with a microphone is recommended. · System updates must be regularly installed. · Anti-Virus / Anti-Malware software	**Minimum Requirements:** A Macintosh (V10.14 and above) **computer/laptop** · Minimum 4GB of RAM. · 10GB+ available hard drive storage. · Enough available hard drive space to install the Microsoft Office suite (approximately 3GB). Microsoft Office software is free to all Keyano students and employees. · Microphone, webcam and speakers. A headset with a microphone is recommended. · System updates must be regularly installed. · Anti-Virus / Anti-Malware software.
Recommended Requirements · 8GB of RAM · A method of backing up/synchronizing to local or cloud-based storage such as OneDrive is highly recommended. This is included if you complete the setup of KeyanoMail and download MS Office using your Keyano email for free.	**Recommended Requirements** · 8GB of RAM · A method of backing up/synchronizing to local or cloud-based storage such as OneDrive is highly recommended. This is included if you complete the setup of KeyanoMail and download MS Office using your Keyano email for free.

Chromebooks are **not** recommended as they are not compatible with testing lockdown browsers.

A Microsoft Surface or iPad or iPad Pro may be possible alternatives in some program areas.

Specific department requirements:
Business and OA programs require Windows 10.
Other programs may utilize Windows based tools as well.

Computer Software
Students will be able to get access to Microsoft Office 365 for Free using Keyano Credentials by [clicking here](#).

Recording of lectures and Intellectual Property
Students may only record a lecture if explicit permission is provided by the instructor or by Accessibility Services. Even if students have permission to record a lecture or lecture materials, students may not publish any of the lectures or lecture materials, this includes any recordings, slides, instructor notes, etc. on any platform. Thus no student is allowed to publish or sell instructor notes without formal written permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property.

ITS Helpdesk
If you are having issues with your student account, you can contact the ITS Helpdesk by emailing its.helpdesk@keyano.ca or calling 780-791-4965.

Important Phone Numbers

- **Candace Trites, Administrative Assistant**   **780-791-4881**
  Call Candace if you are going to be absent from class or have any general questions or concerns.

- **Craig Cail, Construction Trades & Heavy Industrial Chair**   **780-715-3902**
  Call Craig if you have any concerns with class work, instructors, or if you require any type of academic accommodations.

  Call your instructor if you need information about class work, schedules or if you need extra help to learn the material.

- **Mark Power, Alberta AIT**   **780-743-7181**
  Call Mark if you have questions about attendance, apprenticeship, or your employer.

- **Security**   **780-791-7911**
  Call security if you feel threatened while on campus, to report a fire, if you need a door unlocked, or for parking issues.

- **Office of the Registrar**
  - **Registration Assistants**   **780-791-4801**
  Call this office if you have questions about fees/tuition or class availability.

- **Student Life Calendar**   https://calendar.keyano.ca/student/
  Refer to the Student Life calendar for events and important dates for students.

IMPORTANT NOTICE

Information Regarding Fees and Procedures

If the address listed on your fee assessment sheets is different from your current address, or if your address changes anytime during the duration of your program, please go to the Student Services Centre and fill out the "Change of Address" form as Keyano College requires a current address for you at all times.

Your Student ID cards are available for pick up in the Office of the Registrar. Please have your Student ID # and photo identification available. Apprentices are required to pick up a new Student ID card every Academic Year.

For information on Awards/Bursaries, please contact the Student Services Center either in person or by phone at (780) 791-4894.

Keyano College is a paid parking facility. Parking passes can be purchased at the Bookstore. Current rates can be found at: https://www.keyano.ca/en/about-us/parking.aspx

> When parking, please be mindful of designated areas ("Reserved", "Metered", etc.) Unreserved, General Parking is available in lots A, B, E and F. Lots C and D are reserved staff parking. If you park in a reserved spot, you can be ticketed even if you have a hang tag or daily pass. Please see the campus map for locations of the parking lots.

Please Note:

- It is now your responsibility to submit your E.I. forms on your own time.
  (HRDC no longer comes to the college)

- You can submit your registration on-line
  http://www100.hrdcdrhc.gc.ca/ae-ei/dem-app/english/home2.html

- Or link from http://www.servicecanada.gov.ca

CLEARWATER CAMPUS MAP | For classroom **MAPS** please refer to **SAKC STUDENT HANDBOOK**