



## **Fourth Period Technical Training**

### **- Heavy Equipment Technician -**

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

Fourth Period Technical Training - Heavy Equipment Technician

**Jason Lalonde - Chair**

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**Instructor(s):**

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**Kevin Wills – HET Instructor**

78-799-8618

[Kevin.Wills@keyano.ca](mailto:Kevin.Wills@keyano.ca)

**Office Hours:**

Monday through Friday: 8:00 am – 4:00 pm

**Suncor Energy Industrial Campus (SEIC)**

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

**Fourth Period ILM Package** and 4th Year Keyano College handout package

## **Heavy Equipment Technician 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 520 is recommended)
- Coveralls
- CSA approved safety boots
- Safety goggles
- 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. Power Train (Specific to Truck and Transport)
2. Steering and Antilock Brake Systems
3. Air Conditioning
4. Vehicle Electrical Diagnosis, Failure Analysis and Apprenticeship

## **Learning Outcomes**

**Upon successful completion of Section One – POWER TRAIN (SPECIFIC TO TRUCK AND TRANSPORT) - you will be able to**

1. Service and diagnose common clutch types.
2. Diagnose and service drivelines and universal joints.
3. Explain basic gearing principles.
4. Explain the principles of operation and design features of synchromesh and multiple countershaft mechanical transmissions.
5. Explain mechanical and electronic transmission shift controls.
6. Repair mechanical transmissions.
7. Explain the operating principles and repair procedures of transfer cases and auxiliary drive units.

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8. Explain the functions and operating principles of drive axle assemblies.
9. Repair drive axle assemblies.

### **Upon successful completion of Section Two - STEERING SYSTEMS AND ANTILOCK BRAKE SYSTEMS - you will be able to**

1. Diagnose truck steering systems.
2. Diagnose and service truck steering systems.
3. Identify steering angles and their effects on vehicle handling.
4. Explain the operation of antilock braking systems (ABS) and automatic traction control (ATC) systems.
5. Diagnose and service air antilock braking systems (ABS).
6. Explain the operation of typical hydraulic antilock braking systems (ABS)

### **Upon successful completion of Section Three – AIR CONDITIONING - you will be able to**

1. Explain the operating principles of basic air conditioning systems.
2. Explain the operating principles of heating, ventilation air conditioning (HVAC) control systems.
3. Diagnose and service air conditioning systems.

### **Upon successful completion of Section Four – ANTI LOCK BRAKE SYSTEMS (AIR AND HYDRAULIC BRAKES) - you will be able to**

1. Explain the operating of typical truck electrical and warning circuits.
2. Diagnose and repair truck electrical circuits.
3. Explain predictive maintenance procedures utilizing failure and fluid analysis.
4. Explain truck inspection according to Commercial Vehicle Inspection (CVI) regulations.
5. Use coaching skills when training an apprentice.
6. Describe the role of the network of industry committees that represent trades and occupations in Alberta.
7. Use Red Seal products to challenge an Interprovincial examination.

### **Schedule**

A detailed daily class / shop schedule will be handed out on the first day of each intake.

## Grades

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.

Powetrain (specific to T & T)	50.8%
Steering & ABS	20%
Air Conditioning	15%
Elec Diagnosis & App	14.2%
<b>Total Theory Component</b>	<b>100%</b>
Lab/Shop	100%
<b>Total Practical Component</b>	<b>100%</b>

## 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](http://Fast.com).

**System requirements:**

Microsoft Windows	Apple
<p><b>Minimum Requirements:</b></p> <p>A Windows 10 <b>computer/laptop</b></p> <ul style="list-style-type: none"> <li>· Minimum 4GB of RAM.</li> <li>· 10GB+ available hard drive storage.</li> <li>· Enough available hard drive space to install the Microsoft Office suite (approximately 3GB). <a href="#">Microsoft Office</a> software is free to all Keyano students and employees.</li> <li>· Microphone, webcam and speakers. A headset with a microphone is recommended.</li> <li>· System updates must be regularly installed.</li> <li>· Anti-Virus / Anti-Malware software</li> </ul>	<p><b>Minimum Requirements:</b></p> <p>A Macintosh (V10.14 and above) <b>computer/laptop</b></p> <ul style="list-style-type: none"> <li>· Minimum 4GB of RAM.</li> <li>· 10GB+ available hard drive storage.</li> <li>· Enough available hard drive space to install the Microsoft Office suite (approximately 3GB). <a href="#">Microsoft Office</a> software is free to all Keyano students and employees.</li> <li>· Microphone, webcam and speakers. A headset with a microphone is recommended.</li> <li>· System updates must be regularly installed.</li> <li>· Anti-Virus / Anti-Malware software.</li> </ul>
<p><b>Recommended Requirements</b></p> <ul style="list-style-type: none"> <li>· 8GB of RAM</li> <li>· 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.</li> </ul>	<p><b>Recommended Requirements</b></p> <ul style="list-style-type: none"> <li>· 8GB of RAM</li> <li>· 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.</li> </ul>
<p>Chromebooks are <b>not</b> recommended as they are not compatible with testing lockdown browsers.</p> <p>A Microsoft Surface or iPad or iPad Pro may be possible alternatives in some program areas.</p>	

**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](mailto: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**

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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>



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