



## **Fourth Period Technical Training**

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

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

**Instructor(s):**

**Chester Parisian – Chair**

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**Dorsey Butz – HET Instructor**

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**Tony Gauthier – HET Instructor**

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**Darrell Pintkowski – HET Instructor**

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**Kevin Wills – HET Instructor**

**78-799-8618**

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**Office Hours:**

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

**Suncor Energy Industrial Campus (SEIC)**

## Course Description:

In the Fourth Period Technical Training you will learn about:

1. Power train (specific to truck and transport);
2. Steering Systems and Antilock Brake Systems
3. Air Conditioning;
4. Vehicle Electrical Diagnosis, Failure Analysis and Apprenticeship;

**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):

- 2 inch 3-ring binders and lined paper
- 6 or 12 inch ruler
- Pens, writing pencils, coloured pencils, highlighters, erasers
- Calculator (with no programmable memory; Sharp 520 or Casio FX 260 are recommended)
- Coveralls
- CSA approved safety boots and safety glasses

## 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 multiple countershaft mechanical and electronic transmission shift controls.
6. Repair synchromesh and multiple countershaft 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 HVAC (Heating, Ventilation and Air Conditioning) 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 operation of antilock braking system (ABS) and automatic traction control (ATC) systems.
2. Diagnose and service air antilock braking systems (ABS).
3. Explain the operation of typical hydraulic antilock braking systems (ABS).

### **Upon successful completion of Section Five – VEHICLE ELECTRICAL DIAGNOSIS & FAILURE ANALYSIS - you will be able to**

1. Explain the operation 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. Display coaching skills
6. Describe the role of the Alberta Apprenticeship and Industry Training Board and the network of industry committees that represent the 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

Your grade in this period will be based on:

Quizzes	10%
Exams	65%
Labs / Shop Activities	25%
<b>TOTAL</b>	<b>100%</b>

## Important Phone Numbers

- **Candace Trites, Administrative Assistant** **780-791-4881**  
*Call Candace if you will be late or absent from class.*
- **Chester Parisian, HET Program Chair** **780-799-8610**  
*Call Chester if you have any problems with class work, your instructor, or if you need any type of academic accommodation.*  
  
*Call your instructor if you need information about class work, schedules or if you need extra help to learn the material.*
- **Alberta AIT** **1-800-248-4823**  
*Call Debra Poulin if you have questions about attendance, apprenticeship, or your employer.*
- **Security** **780-791-4911**  
*Call security if you feel threatened while on campus, to report a fire 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.*

## 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 Cashier's Office when you go to pay your program fees.

#### **Parking Fees: (2019-2020)**

2 Weeks	\$12.87
1 Month	\$24.76
2 Months	\$39.62

Please ensure that when you are paying your program fees that you indicate to the Cashier whether or not you would like to purchase a parking pass. 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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