

I. COURSE DESCRIPTION:

The suspension , steering and brake systems course is designed to provide the Truck Coach Technician with the necessary theoretical training and hands on testing and repair procedures required to service the many different applications and types of equipment used in the on road commercial vehicle market. Students taking this course will learn the theory involved in the construction and operation of the types of suspension systems, steering systems and braking systems and tire and wheel end assemblies that are currently used and have been used on all types of highway trucks, tractors, buses, trailers, and hauling equipment in the Truck and Coach Commercial on road Vehicle Industry. Students will be taught in depth theory and diagnostic procedures associated with respect to maintenance service and repair and how to safely perform them.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Define the purpose, theory and operation of Pneumatics as used in Air Brake systems.
2. Describe the different Pneumatic Circuits and functions of the CMVSS 121 Braking Systems and Components.
3. Perform diagnostic procedures for trouble shooting manual and automatic Slack Adjusters used on the foundation brake components of the air brake system.
4. Perform diagnostic procedures to check for air leaks, application response times, and release response times.
5. Perform the proper service procedures to repair, overhaul and adjust air brake foundation brakes and systems safely according to Manufacturer s' procedures and government regulations.
6. Define and explain the purpose, construction and operation of Heavy Duty Hydraulic Brake Systems used on Medium Duty Truck and Bus applications.
7. Describe the different types of suspension systems used for truck, coach or bus and tractor trailers used in on highway applications.

8. Perform routine maintenance and service according to Manufacturer specifications.
9. Perform adjustment required for proper suspension ride heights according to service manual procedures.
10. Describe the purpose, construction and operation of the types, styles and application of Commercial Vehicle Wheel End Assemblies.
11. Perform proper wheel bearing installation and adjustment according to manufacturer specifications.
12. Perform diagnosis and repair for tire and rim and problems according to service manual procedures and the Commercial Vehicle Wheel Installation Specifications.

III. TOPICS:

1. Truck and Coach Air Brake Theory
2. Truck and Coach CMVSS 121 Air Braking System Components
3. Truck and Coach Hydraulic Braking Systems
4. Truck and Coach Wheel and Hub Assemblies
5. Service and Repair Standards and Specifications for Air Brake Systems
6. Service and Repair Standards and Procedures for Wheel End and Hub Assemblies
7. Truck and Coach Mechanical and Pneumatic Suspension Systems Service and Repair
8. Truck and Coach Industry, tire application, construction and design
9. requirements

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Hand outs provided by instructor as well as text books requested by department as per booklist.

Text Book: Heavy Duty Truck Systems
4th or 5th ed., 12959# Edition
Author: Bennett
Publisher: Thomson Nelson Learning Canada

Pens, Pencils, Calculator and 3 Ring Binder

V. EVALUATION PROCESS/GRADING SYSTEM:

Students will be tested on the material covered per apprenticeship curriculum by multiple choice questions, assignments, and practical tests. The weigh factor for each area of testing will be as follows:

Theory Tests	50 %
Practical Tests	30 %
Assignments	20 %

This evaluation can change depending on the emphasis placed on each of the above testing procedures.

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

VI. SPECIAL NOTES:**Attendance:**

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will only be granted admission to the room at the Instructors discretion.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.