



## **I. COURSE DESCRIPTION:**

Upon successful completion of this course, the CICE student will learn about the types of chassis, frames, and the suspension systems and tire and wheel assemblies used for On Road Truck, Tractor, and Tractor Trailer Systems. The CICE student will be able to identify and describe the various types of the above systems and their purpose. CICE students will perform visual inspections and routine service and maintenance checks for lose and worn components of frames and chassis, suspensions, tires, and wheel assemblies. CICE students will be required to outline the proper safety procedures for performing the above tasks according to the both Sault College Motive Power Department as well as any vehicle manufacturers safety regulations and specifications.

## **II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the CICE student, along with the assistance of a Learning Specialist, will demonstrate the basic ability to:

1. Properly identify chassis styles, frame types, suspension components, and the tire and wheel assemblies used on a specific type of truck, tractor and tractor trailer unit.
  - Identify the figuration style of cab and chassis (eg) Truck or Tractor or Tractor Trailer
  - Identify frame style of vehicle (eg) C-channel, box, X-style, steel frame, aluminum frame, double frame or single frame construction
  - Note the type of suspension system used (eg) Air Ride, Multiple Leaf, Rubber Block, Independent
  - List the type and size of the tire and rim assemblies
2. Assist in an inspection of the frame and suspension for
  - Cracks in the frame rails and cross member
  - Loose fasteners holding the cross members to frame.
  - Loose or damaged shocks
  - Broken leaf spring, loose U-bolts, worn bushings
  - Shifted axel assemblies

3. Assist in performing a proper circle check and inspection.
  - Check tire pressures and valve stem location.
  - Check wheel assemblies visually for loose fasteners.
  - Check drive wheel ends for lubrication leaks.
  - Check tires for tread wear and unusual wear patterns
  - Check dual wheel configurations for proper size tires and tread design
  
4. Assist in performing service checks on front axles.
  - Inspect front wheels hubs for lube level and seal leaks
  - Inspect tie rod ends for excessive wear and looseness
  - Inspect king pins and king pin bushings turning ease and excessive wear
  
5. Assist in performing a visual inspection and normal serving of fifth wheel assemblies
  - Check for loose mounting hardware
  - Check mounting bushings for excessive wear
  - Check sliding fifth wheel for proper operation
  - Visually check jaws for loose or broken components
  - Check fifth wheel plate for gouges and cracks.

### **III. TOPICS:**

1. Properly identify chassis styles, frame types, suspension components, and tire and wheel assembly types.
2. Assist in an inspection of the frame and suspension .
3. Assist in performing a proper circle check and inspection.
4. Assist in performing service checks on front axles.
5. Assist in performing a visual inspection and normal serving of fifth wheel assemblies.

**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**

**Edition: 5<sup>th</sup> ed., 12959#**

**Author: Bennett**

**Publisher: Thomson Nelson Learning Canada**

**Pens, Pencils, Calculator and 3 Ring Binder**

**\*Shop Coat or Coveralls**

**\*CSA Approved Work boots**

**\*CSA Approved Safety Glasses**

**(\*These Items are Mandatory For The Shop)**

**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:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	

F (Fail)	49% and below	0.00
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.**

**CICE Modifications:**

**Preparation and Participation**

1. A Learning Specialist will attend class with the student(s) to assist with inclusion in the class and to take notes.
2. Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3. Study notes will be geared to test content and style which will match with modified learning outcomes.
4. Although the Learning Specialist may not attend all classes with the student(s), support will always be available. When the Learning Specialist does attend classes he/she will remain as inconspicuous as possible.

**A. Tests may be modified in the following ways:**

1. Tests, which require essay answers, may be modified to short answers.
2. Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3. Tests, which use fill in the blank format, may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4. Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

**B. Tests will be written in CICE office with assistance from a Learning Specialist.**

***The Learning Specialist may:***

1. Read the test question to the student.
2. Paraphrase the test question without revealing any key words or definitions.
3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.

**C. Assignments may be modified in the following ways:**

1. Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2. Some assignments may be eliminated depending on the number of assignments required in the particular course.

***The Learning Specialist may:***

1. Use a question/answer format instead of essay/research format
2. Propose a reduction in the number of references required for an assignment
3. Assist with groups to ensure that student comprehends his/her role within the group
4. Require an extension on due dates due to the fact that some students may require additional time to process information
5. Formally summarize articles and assigned readings to isolate main points for the student
6. Use questioning techniques and paraphrasing to assist in student comprehension of an assignment

**D. Evaluation:**

Is reflective of modified learning outcomes.