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- I. COURSE DESCRIPTION:** The CICE student, with assistance from a Learning Specialist, will acquire a basic skill level in regard to the procedures for servicing truck and coach vehicle systems for the purpose of routine maintenance. This will involve servicing of the truck, bus or tractor and trailer combination vehicles on a monthly maintenance schedule. The CICE student, with assistance, will perform engine and power train lubrication fluid inspections and changes, as well as lubrication to chassis steering and suspension components and inspections of brake and brake adjustment systems and will be required to record data from such vehicles and equipment into the service records similar to that used by trucking and bussing companies and fleets. This will include the creation and setup of such programs that could be adapted to electronic files and storage as so commonly used today. All servicing of this nature would be conducted by using proper safety and maintenance procedures as outline in the proper manufacturer service manuals.

Students will be required to follow proper safety procedures when performing the above tasks according to both Sault College Motive Power Department Standards and Vehicle Manufacturers safety regulations and specifications.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Properly raise, support and lower vehicles and equipment such as trucks, tractors and trailers for the purpose of performing lubrication and service.

Potential Elements of the Performance:

- Find lifting locations
- Safely raise and support assigned vehicles

2. Perform the applicable engine lube service and chassis lubrication service to a variety of on road vehicles and equipment.

Potential Elements of the Performance:

- Change engine oil and filters
- Lube chassis as required
- Lube steering linkage and driveline components as required

3. Perform visual inspection, test and repair vehicle lighting systems.
Potential Elements of the Performance:
 - Check operation of all lighting systems
 - Replace and repair lighting as required

4. Perform a proper circle check inspection of a combination vehicle as well as a truck or tractor type vehicle according to Trucking Industry Standards.
Potential Elements of the Performance:
 - Inspect tire wear and record measurements and pressures
 - Measure brake chamber push rod stroke
 - Check wheel attachment
 - Check compressor mounting and air pressure build time
 - Listen for audible air leaks
 - Check fifth wheel for proper mounting
 - Visually inspect the frame for cracks

5. Perform Cooling System testing and Service using the proper methods and coolant handling equipment according to Manufacturers Specifications and Safety Policies.
Potential Elements of the Performance:
 - Test antifreeze freeze protection
 - Test PH and recommend the proper procedure to correct the problem
 - Check water pump drive system and fan
 - Check rad and hoses for condition, external leaks and cleanliness

6. Perform scheduled maintenance inspections according to various Company oriented inspection criteria and record results.
Potential Elements of the Performance:
 - Perform A, B and C type inspections on forms supplied
 - Electronically store records of inspection results

7. Visually inspect batteries for loose and corroded cables and open circuit voltage. Check charging and starting system operation. Clean

and service batteries as required. Perform battery load test with an electronic battery tester to confirm that the batteries are within the proper specifications.

Potential Elements of the Performance:

- Perform wiggle test
- Check battery voltage
- Test charging voltage
- Clean and service batteries as required
- Perform electronic load test
- Check charging system voltage at the batteries
- Test cranking voltage
- Perform starter current draw test

III. TOPICS:

1. Safe Jacking and Lifting Procedures for Heavy Truck Vehicles and Equipment.
2. Medium and Heavy Truck lubrication Systems.
3. Medium and Heavy Truck lighting systems
4. Highway Vehicle Circle Check Requirements
5. Truck cooling systems.
6. Maintenance Schedule Intervals and Record Keeping Methods
7. Heavy truck batteries, starting and charging system service procedures.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Text:

Heavy Duty Truck Systems 5th Edition - Bennett

*Pen or pencil and a clipboard

*Coveralls

*CSA approved steel toe boots (high top)

*CSA approved safety glasses

*these items mandatory for shop

V. EVALUATION PROCESS/GRADING SYSTEM:

The final grade for this course will be based on the results of classroom, assignments and shop evaluations weighed as indicated:

Assignments – 50% Complete assigned work orders and service interval inspections according to manufacturer's recommendations.

Shop – 50% of the final grade is comprised of attendance, punctuality, preparedness, student ability, work organization and general attitude

(Student will be given notice of test and assignment dates in advance)

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.

VII. COURSE OUTLINE ADDENDUM:

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

Addendum:

Further modifications may be required as needed as the semester progresses based on individual student(s) abilities and must be discussed with and agreed upon by the instructor.

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.