

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



CICE COURSE OUTLINE

COURSE TITLE: Truck Coach Chassis & Suspension Systems

CODE NO. : MPF129 **SEMESTER:** Winter
MODIFIED CODE: MPF0129

PROGRAM: Motive Power Technician – Advanced Repair
Motive Power Fundamentals – Heavy Equipment and
Truck Repair

AUTHOR: Group 2014
MODIFIED BY: Shirley Timmerman, Learning Specialist CICE Program

DATE: Jan/2016 **PREVIOUS OUTLINE DATED:** 2015

APPROVED: “Angelique Lemay” Jan/2016

DEAN **DATE**

TOTAL CREDITS: 1

PREREQUISITE(S): MPF0103

HOURS/WEEK: 3

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I. **COURSE DESCRIPTION:**

With assistance from a Learning Specialist, the CICE student will learn about the different types of truck and trailer chassis used in fifth wheel truck and trailer configurations for short haul and long haul applications involved in both on road and off-road applications. This will include the use of fifth wheel hook ups, converter dollies, and trailer dolly applications. The CICE student will acquire a basic knowledge in regard to truck and trailer frames and types of suspensions used to support and carry the loads for different duty applications involved in short haul, long haul and construction applications. The CICE student will also be taught the different types of tires and rims used in the trucking industry and how to properly remove and reinstall onto the different truck and trailer applications. CICE students, with assistance, will be taught to diagnose and repair chassis and suspension system failures and problems according to the manufacturer's procedures.

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 student, with the assistance of a Learning Specialist will demonstrate the basic ability to

1. ***Properly identify the chassis styles, frame types used, suspension components, and the tire and wheel assembly type 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. ***Perform 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 axle assemblies

- 3. *Perform a proper tire and wheel 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. *Perform 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
 - Test spring shackles, spring pins and bushings

- 5. *Perform 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. Chassis styles, frame types used, suspension components, and the tire and wheel assembly types.
2. Perform inspection of the frame and suspension.
3. Perform a proper tire and wheel inspection.
4. Perform service checks on front axles.
5. Perform 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: 5th ed., 12959#

Author: Bennett

Publisher: Thomson Nelson Learning Canada

Pens, Pencils, Calculator and 3 Ring Binder

* Coveralls

*CSA Approved Work boots

*CSA Approved Safety Glasses

(*These Items are Mandatory For The 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:

- Classroom – 35% of the final grade is comprised of term tests
- Assignments – 10% of the final grade is comprised of a number of technical reports
- Shop – 45% of the final grade is comprised of attendance, punctuality, preparedness, student ability, work organization and general attitude
- Employability Skills – 10% of final grade is comprised of attendance, class participation, show ability to follow direction and being a team player.

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

NOTE: All assignments will be in typed format. NO hand written assignments will be accepted.

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.	

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

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.

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.