



# COURSE OUTLINE

## MPF0126

Prepared: George Parsons    Approved: Corey Meunier

<b>Course Code: Title</b>	MPF0126: HEAVY DUTY SYSTEMS MAINTENANCE FOR CICE
<b>Program Number: Name</b>	1120: COMMUNITY INTEGRATN
<b>Department:</b>	C.I.C.E.
<b>Semester/Term:</b>	18W
<b>Course Description:</b>	<p>Upon successful completion of this course, Heavy Duty System Maintenance, the student will be able to identify and describe the various types of off road heavy equipment. Course will focus on entry level maintenance procedures performed on various pieces of Heavy Equipment as well as safety precautions to be observed working on and around Heavy Equipment.</p> <p>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.</p>
<b>Total Credits:</b>	1
<b>Hours/Week:</b>	2
<b>Total Hours:</b>	14
<b>Essential Employability Skills (EES):</b>	<p>#1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>#2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>#3. Execute mathematical operations accurately.</p> <p>#4. Apply a systematic approach to solve problems.</p> <p>#5. Use a variety of thinking skills to anticipate and solve problems.</p> <p>#6. Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>#7. Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>#8. Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>#9. Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>#10. Manage the use of time and other resources to complete projects.</p> <p>#11. Take responsibility for ones own actions, decisions, and consequences.</p>
<b>Course Evaluation:</b>	Passing Grade: 50%, D



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### Other Course Evaluation & Assessment Requirements:

#### V. EVALUATION PROCESS/GRADING SYSTEM:

Assigned equipment service and maintenance inspection reports 50%

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

The following semester grades will be assigned to students:

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

### Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assigned Shop Projects	50%
Shop	50%

### Books and Required Resources:

Heavy Duty Truck Systems by Bennett  
Publisher: Cengage Learning Edition: 6th

### Course Outcomes and

Upon successful completion of this course, the CICE student, with the assistance of a Learning



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### Learning Objectives:

Specialist will acquire varying levels of skill development relevant to the following learning outcomes:

### Course Outcome 1.

Visually Identify types and styles of Heavy Equipment

### Learning Objectives 1.

Potential Elements of the Performance:

- Identify different pieces of heavy equipment
- Identify major components in heavy equipment.

### Course Outcome 2.

Perform service and maintenance inspections following manufactures recommendations

### Learning Objectives 2.

Potential Elements of the Performance:

- Be aware of safety hazards that exist in a heavy equipment repair shop and take proactive measures to address them.
- Be aware and take proactive measures to the safety hazards that exist in performing routine maintenance on heavy equipment.
- Perform safe lifting procedures with every lift.
- Perform safe climbing procedures when climbing is required.
- Safely block a machine so maintenance can be performed as per manufactures recommendations.
- Perform service and maintenance on heavy equipment as per manufactures recommendations.
- Complete assigned inspection reports.

### Course Outcome 3.

Perform Cooling System testing and Service using the proper methods and coolant handling equipment according to Manufacturers Specifications and Safety Policies.



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### **Learning Objectives 3.**

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
- Check drive belt tension and condition

### **Course Outcome 4.**

Equipment Operation

### **Learning Objectives 4.**

Potential Elements of the Performance:

- Be able to safely operate at least one piece of heavy equipment to perform routine maintenance on it as per manufactures' recommendations.

### **Course Outcome 5.**

Perform visual inspection, test and repair vehicle lighting systems.

### **Learning Objectives 5.**

Potential Elements of the Performance:

- Check operation of all lighting systems
- Replace and repair lighting as required

### **Course Outcome 6.**

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





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### Learning Objectives 6.

Potential Elements of the Performance:

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

#### 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.** 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.

#### **B. 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.

**C. 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.



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3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.

### **D. 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

### **E. Evaluation:**

Is reflective of modified learning outcomes.

**NOTE:** Due to the possibility of documented medical issues, CICE students may require alternate methods of evaluation to be able to acquire and demonstrate the modified learning outcomes

**Date:**

Wednesday, September 6, 2017

Please refer to the course outline addendum on the Learning Management System for further information.