



COURSE OUTLINE

MPF126

Prepared: George Parsons Approved: Corey Meunier

Course Code: Title	MPF126: HEAVY DUTY VEHICLE SYSTEMS MAINTENANCE
Program Number: Name	5085: HEAVY EQUIP/REPAIR
Department:	MOTIVE POWER
Semester/Term:	18W
Course Description:	<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>
Total Credits:	1
Hours/Week:	2
Total Hours:	14
Prerequisites:	MPF103
Vocational Learning Outcomes (VLO's): Please refer to program web page for a complete listing of program outcomes where applicable.	<p>5085 - HEAVY EQUIP/REPAIR</p> <p>#1. Identify basic motive power system problems by using critical thinking skills and strategies and by applying fundamental knowledge of motor vehicle operation, components, and their interrelationships.</p> <p>#3. Identify, inspect, and test basic electrical, electronic, and emission components and systems in compliance with manufacturers' recommendations.</p> <p>#5. Identify, inspect, and test basic suspension, steering, and brake components and systems in compliance with manufacturers' recommendations.</p> <p>#6. Disassemble and assemble components to required specifications by applying workshop skills and knowledge of basic shop practices.</p> <p>#7. Use a variety of test equipment to assess basic electronic circuits, vehicle systems, and subsystems.</p> <p>#8. Apply basic knowledge of hydraulics and pneumatics to the testing and inspection of basic motive power systems and subsystems.</p> <p>#9. Communicate information effectively, credibly, and accurately by producing supporting documentation to appropriate standards.</p>

	<p>#10. Use information technology and computer skills to access data concerning repair procedures and manufacturers' updates.</p> <p>#11. Prepare logs, records, and documentation to appropriate standards.</p> <p>#12. Apply business practices and communication skills to improve customer service.</p>						
Essential Employability Skills (EES):	<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>#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>#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>						
Course Evaluation:	Passing Grade: 50%, D						
Other Course Evaluation & Assessment Requirements:	<p>V. EVALUATION PROCESS/GRADING SYSTEM:</p> <p>Assigned equipment service and maintenance inspection reports 50%</p> <p>Shop 50% of the final grade is comprised of attendance, punctuality, preparedness, student ability, work organization and general attitude.</p> <p>The following semester grades will be assigned to students:</p> <p>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</p> <p>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.</p>						
Evaluation Process and Grading System:	<table border="1"> <thead> <tr> <th>Evaluation Type</th> <th>Evaluation Weight</th> </tr> </thead> <tbody> <tr> <td>Assigned Shop Projects</td> <td>50%</td> </tr> <tr> <td>Shop</td> <td>50%</td> </tr> </tbody> </table>	Evaluation Type	Evaluation Weight	Assigned Shop Projects	50%	Shop	50%
Evaluation Type	Evaluation Weight						
Assigned Shop Projects	50%						
Shop	50%						
Books and Required	Heavy Duty Truck Systems by Bennett						

Resources:

Publisher: Cengage Learning Edition: 6th

Course Outcomes and Learning Objectives:**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.

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.

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

Date:

Monday, December 18, 2017

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