COURSE OUTLINE: MPF130 - TC VEH. SYS. MAINT.

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Course Code: Title	MPF130: TRUCK COACH VEHICLE SYSTEMS MAINTENANCE
Program Number: Name	4044: MOT POWER ADV REPAIR 5085: HEAVY EQUIP/REPAIR
Department:	MOTIVE POWER
Academic Year:	2024-2025
Course Description:	You will perform simulated work place servicing of 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. You 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. You 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 outlined in the proper manufacturer service information.
Total Credits:	1
Hours/Week:	2
Total Hours:	14
Prerequisites:	MPF103
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**4044 - MOT POWER ADV REPAIR** VLO 1 Analyse, diagnose, and solve various motive power system problems by using problem-solving and critical thinking skills and strategies and by applying fundamental knowledge of motor vehicle operation, components, and their interrelationships. VLO 2 Diagnose and repair climate control systems in compliance with manufacturer's recommendations. VLO 3 Diagnose and repair engine systems in compliance with manufacturer's recommendations. VLO 4 Diagnose and repair electrical, electronic, personal safety, and emission components and systems in compliance with manufacturer's recommendations. VLO 5 Diagnose and repair drive train components and systems in compliance with manufacturer's recommendations. VLO 6 Diagnose and repair suspension, steering, and brake components and systems in compliance with manufacturer's recommendations. VLO 7 Disassemble and assemble components to required specifications by applying workshop skills and knowledge of basic shop practices.

	VLO 8	Select and use a variety of troubleshooting techniques and test equipment to assess electronic circuits, vehicle systems, and subsystems.
	VLO 9	Apply knowledge of hydraulics and pneumatics to the testing and analysis of motive power systems and subsystems.
	VLO 10	Communicate information effectively, credibly, and accurately by producing supporting documentation to appropriate standards.
	VLO 11	Use information technology and computer skills to support work in a motive power environment.
	VLO 12	Prepare, support, maintain, and communicate data from log, record, and documentation systems.
	VLO 14	Assist in quality-control and quality-assurance programs and procedures.
	5085 - HEAVY EQUIP/REPAIR	
	VLO 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.
	VLO 2	Identify, inspect, and test basic engine components and systems in compliance with manufacturers' recommendations.
	VLO 3	Identify, inspect, and test basic electrical, electronic, and emission components and systems in compliance with manufacturers' recommendations.
	VLO 4	Identify, inspect, and test basic drive train components and systems in compliance with manufacturers' recommendations.
	VLO 5	Identify, inspect, and test basic suspension, steering, and brake components and systems in compliance with manufacturers' recommendations.
	VLO 6	Disassemble and assemble components to required specifications by applying workshop skills and knowledge of basic shop practices.
	VLO 7	Use a variety of test equipment to assess basic electronic circuits, vehicle systems, and subsystems.
	VLO 8	Apply basic knowledge of hydraulics and pneumatics to the testing and inspection of basic motive power systems and subsystems.
	VLO 9	Communicate information effectively, credibly, and accurately by producing supporting documentation to appropriate standards.
	VLO 10	Use information technology and computer skills to access data concerning repair procedures and manufacturers' updates.
Essential Employability Skills (EES) addressed in this course:	EES 1	Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
	EES 2	Respond to written, spoken, or visual messages in a manner that ensures effective communication.
	EES 3	Execute mathematical operations accurately.
	EES 4	Apply a systematic approach to solve problems.
	EES 5	Use a variety of thinking skills to anticipate and solve problems.
	EES 6	Locate, select, organize, and document information using appropriate technology and information systems.
	EES 7	Analyze, evaluate, and apply relevant information from a variety of sources.

	EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
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.
Books and Required Resources:	Heavy Duty Truck Systems by Bennett Publisher: Cengage Learning Edition: 7th ed

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Properly raise, support and lower vehicles and equipment such as trucks, tractors and trailers for the	• Find lifting locations • Safely raise and support assigned vehicles

purpose of performing lubrication and service.	
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Perform the applicable engine lube service and chassis lubrication service to a variety of on road vehicles and equipment.	• Change engine oil and filters • Lube chassis as required • Lube steering linkage and driveline components as required
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Perform visual inspection, test and repair vehicle lighting systems.	• Check operation of all lighting systems • Replace and repair lighting as required
Course Outcome 4	**Learning Objectives for Course Outcome 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.	• 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
Course Outcome 5	**Learning Objectives for Course Outcome 5**
Perform Cooling System testing and Service using the proper methods and coolant handling equipment according to Manufacturers	• 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
Course Outcome 6	**Learning Objectives for Course Outcome 6**
Perform scheduled maintenance inspections according to various Company oriented inspection criteria and record results.	• Perform A, B and C type inspections on forms supplied • Electronically store records of inspection results
Course Outcome 7	**Learning Objectives for Course Outcome 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.	• 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

Evaluation Process and Grading System:	

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

Date:	August 9, 2024
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.