COURSE OUTLINE: MPF121 - AUTO VEH SYST MAINT.

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Course Code: Title	MPF121: AUOTOMOTIVE VEHICLE SYSTEMS MAINTENANCE
Program Number: Name	4041: AUTOMOTIVE REPAIR 4044: MOT POWER ADV REPAIR
Department:	MOTIVE POWER
Academic Year:	2024-2025
Course Description:	This course is an automotive simulated workplace preparation course. You will perform entry level automotive maintenance, servicing and repairs. Topics will include: vehicle component and systems identification, performance of servicing suspension and steering systems including wheels and tires, vehicle lubrication and maintenance inspections, electrical systems testing and inspection, brake system service and inspection and fuel system service. Seasonal inspection programs will be outlined and oil life and tire monitor reset procedures will be performed. Work ethics and customer satisfaction will be stressed in preparation for the work place.
Total Credits:	2
Hours/Week:	4
Total Hours:	28
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.**	**4041 - AUTOMOTIVE 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 manufacturer's 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 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 manufacturer's updates.

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 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 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.
VLO 16	Complete all assigned work in compliance with occupational, health, safety, and environmental law; established policies and procedures; codes and regulations; and in accordance with ethical principles.

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:

Other Course Evaluation & Assessment Requirements:

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:

Automotive Technology: A Systems Approach by Erjavec Restole
Publisher: Cengage Learning Canada Edition: 4th Canadian

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Use Motive Power Information systems to service and repair vehicles	• Access manufactures service information • Prepare documentation explaining a repair procedure • Document vehicle maintenance inspection results • Prepare a proper vehicle Work Order
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Safely hoist and support vehicles for servicing and repairs	• Perform safe lifting procedures and a two post hoist • Perform safe lifting procedures and a four post hoist • Safely lift and support and vehicle using a floor jack and jack stands • Repair a damaged thread • Identify hand tools
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Perform work place related electrical testing and repairs.	• Demonstrate proficiency at using a DVOM • Perform a wiring repair • Test starting and charging systems • Perform battery load test • Perform battery charging technique
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Perform Hydraulic brake system inspection and servicing	• Inspect and report on braking system condition • Service disc and drum brakes • Report on fluid condition • Repair a brake line
Course Outcome 5	**Learning Objectives for Course Outcome 5**

	Perform Steering and Suspension inspection and servicing	• Repair a tire • Balance tires • Inspect condition of shocks and struts • Lubricate steering and suspension components
	Course Outcome 6	**Learning Objectives for Course Outcome 6**
	Perform under hood servicing and testing of engine related components.	• Perform a vehicle maintenance inspection including engine oil and filter change • Service a cooling system • Remove and replace engine accessory drive belts • Test engine oil pressure
	Course Outcome 7	**Learning Objectives for Course Outcome 7**
	Perform Fuel systems inspection, servicing and testing	• Replace fuel filters • Repair gas lines • Test fuel pressure

Evaluation Process and Grading System:

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

Date: November 12, 2024

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