SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	FUEL SYSTEMS I		
CODE NO. :	MPF124	**SEMESTER:**	TWO
PROGRAM:	MOTIVE POWER FUNDAMENTALS		
AUTHOR:	Dan Tregonning		
DATE:	March 2013	**PREVIOUS OUTLINE DATED:**	March 2012

APPROVED: *"Corey Meunier"*

CHAIR **DATE**

TOTAL CREDITS:	FIVE
PREREQUISITE(S):	MPF103
HOURS/WEEK:	EIGHT

I. COURSE DESCRIPTION

In this course, you will learn the construction, operating principles, testing and service techniques used in fuel systems including, fuel pumps, tanks , lines and sub-systems. Emission controls will be studied focusing on systems purpose and construction. You will also be introduced to electronic gasoline fuel injection and diesel fuel injection systems and electronic diesel fuel injection systems.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Identify fuel subsystem components on a gasoline and diesel engine

Potential Elements of the Performance:

- Study the different fuel system subsystems and how they connect together

2. Describe the components used in a diesel and gas engine fuel system.

Potential Elements of the Performance:

- List and describe the different fuel system components and how they work together in the fuel system

3. Define the functions of internal and external fuel tank components

Potential Elements of the Performance:

- Remove a fuel tank from a vehicle replacing a fuel pump.
- Identify all components attached to the fuel tank
- Test fuel pressure on a fuel injected vehicle

4. Troubleshoot a fuel tank sending unit

Potential Elements of the Performance:

- Test a fuel tank sending unit and the dash gauge manually and with a scan tool

5. Define the role of primary and secondary fuel filters

Potential Elements of the Performance:

- Describe the why we use different types of fuel filters and causes of defective filters

6. Service primary and secondary fuel filters

Potential Elements of the Performance:

- Replace primary and secondary fuel filters on a diesel engine.
- Replace a fuel filter on a gasoline engine

7. Introduction to scan tools as related to fuel system diagnosis

8. Introduction to Emission Control Systems and their relationship to Fuel Systems.

9. Introduction to Alternate Fuel Sources

III. TOPICS:

1. Fuel subsystems
2. Components of fuel systems
3. Fuel Tanks
4. Fuel Tank Sending Units
5. Fuel Filters
6. Servicing Fuel Filters
7. Basic Scan Tool usage
8 Introduction to emission controls
9 Introduction to Alternate fuels

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Automotive Technology – Textbook & Workbook

The following items are mandatory for entrance to the Shop:

- shop coat or coveralls
- CSA approved steel toe boots (high top)
- CSA approved safety glasses

Pens, pencils, calculator, 3-ring binder

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 – 60% - of the final grade is comprised of term tests
Assignments – 10% - of the final grade is comprised of a number of technical reports
Shop – 30% - of the final grade is comprised of attendance, punctuality, preparedness, student ability, work organization and general attitude

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

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.

VI. SPECIAL NOTES:

Cell phones cannot be used in the class or in the Shop as they are not only a distraction but a potential hazard.

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.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.