SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	Engine Fuel Management Systems		
CODE NO. :	MSE200	**SEMESTER:**	TWO
PROGRAM:	Marine & Small Powered Equipment Mechanic (8066)		
AUTHOR:	Chris Delyzer & Gord Strachan		
DATE:	January 2013	**PREVIOUS OUTLINE DATED:**	January 2012

APPROVED: *"Corey Meunier"* _____

CHAIR **DATE**

TOTAL CREDITS: THREE

PREREQUISITE(S):

HOURS/WEEK:

For additional information, please contact Corey Meunier, Chair
School of Technology & Skilled Trades
(705) 759-2554, Ext. 2610

I. COURSE DESCRIPTION:

Upon successful completion of the reportable subject, the student is able to recommend repairs for gasoline engine fuel management systems in accordance with government safety regulations, manufacturers' recommendations and specifications and approved industry standards.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Test and Maintain Gasoline Fuel Systems.

Potential Elements of the Performance:

- Define the essential information and fundamentals of gasoline fuel systems.
- Describe the construction features of gasoline fuel systems and alternate fuel systems and components.
- Explain the principles of operation and troubleshooting techniques for electronic fuel injection and carbureted systems.
- Inspect, test and troubleshoot carbureted and fuel injection fuel systems.
- Perform manufacturers' system maintenance procedures for carbureted and electronic fuel injection systems.

2. Test and Service Diesel Fuel Systems.

Potential Elements of the Performance:

- Define the essential basic information and fundamentals of diesel fuel injection systems.
- Describe the basic construction features of diesel fuel injection systems components.
- Explain the basic principles of operation of diesel fuel injection systems.
- Inspect and test diesel fuel systems with the prescribed service tools and equipment.
- Describe manufacturers' system maintenance procedures of diesel fuel systems and perform assigned operations.

3. Inspect and Test Intake and Exhaust Systems.

Potential Elements of the Performance:

- Define the essential information and fundamentals of intake and exhaust systems.
- Describe the function, composition and construction of intake and exhaust systems.
- Explain the principles of operations of intake and exhaust systems
- Inspect and test for intake and exhaust systems with the prescribed service tools and equipment.

4. Inspect and Test Emission Control Systems.

Potential Elements of the Performance:

- Define the essential information and fundamentals of emissions control systems.
- Describe the construction features of emission control systems and components.
- Explain the principles of operation of emission control systems.
- Inspect and test emission control systems with the prescribed service tools and equipment.

III. TOPICS:

1. Gasoline Fuel Systems
2. Diesel Fuel Systems
3. Intake and Exhaust Systems
4. Emission Control Systems

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Title: Understanding the Outboard Motor
Edition: 3rd 03 ed., 3232#
Author: Stagner
Publisher: Pearson Education Canada

Title: Outdoor Power Equipment
Edition: 01 ed., 8420#
Author: Webster
Publisher: Nelson Thomson Learning

Title: Outdoor Power Equipment (LAB MAN)
Edition: 01 ed., 9592#
Author: Webster
Publisher: Nelson Thomson Learning

Title: Boat Owner's Mechanical and Electrical Manual
Edition: 03 ed.
Author: Nigel Caulder
Publisher: McGraw Hill

CSA Certified 6 inch Leather Safety Boots
CSA Certified & Impact Resistant Safety Glasses
Coveralls (non-flammable material - i.e. cotton)
Shop Coat (optional)

V. EVALUATION PROCESS/GRADING SYSTEM:

Theory	40%
Application Experiences	30%
Final Assessment	30%

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:

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.

Attendance is mandatory except with a valid excuse. If late you will marked absent for the whole hour. For every unexcused absence you will be deducted 1% per class period. Previous notification or a call the day of absence is required for excusal.
If you miss a test with an unexcused absence you will not be allowed to write that test.
If a class is missed or going to be missed it is your responsibility to notify your instructor and make arrangements for handouts and noted taken while you were away.
CSA approved safety glasses and safety boots must be worn in the shop at all times. Please have safety boots and safety glasses available because you may not have a lot of warning when going into the shop.

CELL PHONES OR PAGERS MUST BE TURNED OFF IN ANY CLASS.

VII. COURSE OUTLINE ADDENDUM:

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