

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**COURSE OUTLINE**

**COURSE TITLE:** Electronic Management Systems

**CODE NO. :** MSE350 and MSE834      **SEMESTER:** TWO

**PROGRAM:** Motive Power Fundamentals – Small Engine Repair (5084)  
Marine Engine Mechanic – Level 3 Apprenticeship (6089)

**AUTHOR:** Gord Strachan

**DATE:** March      **PREVIOUS OUTLINE**      March  
2014      **DATED:**      2013

**APPROVED:**

*“Corey Meunier”*

**CHAIR**      **DATE**

**TOTAL CREDITS:** THREE

**PREREQUISITE(S):**

**HOURS/WEEK:**

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

**I. COURSE DESCRIPTION:**

Upon successful completion of the reportable subject, the student is able to perform electronic management system testing procedures and recommend repairs 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. *Explain Computer Fundamentals.*****Potential Elements of the Performance:**

- Define the essential information and fundamentals of onboard computers.
- Describe the construction features, types and applications of onboard computers.
- Explain the principles of operation of onboard computers.

**2. *Perform Gasoline Engine Electronic Fuel Management;*****Potential Elements of the Performance:**

- Identify the fundamentals of gasoline engine electronic fuel management systems.
- Describe the construction features, types and applications of gasoline engine electronic fuel management systems and components.
- Explain the operating principles of gasoline engine electronic fuel management systems.
- Perform inspection and testing procedures of gasoline engine electronic fuel management systems and components.

**3. *Perform Diesel Engine Electronic Management.*****Potential Elements of the Performance:**

- Identify the fundamentals of diesel engine electronic fuel management systems.
- Describe the construction features, types and applications of diesel engine electronic fuel management systems and components.
- Explain the operating principles of diesel engine electronic fuel management systems.
- Perform inspection and testing procedures of diesel engine electronic fuel management systems and components.
- Describe diesel electronic fuel management service

maintenance procedures.

**4. *Perform Inspection and Testing Procedures for Electronic Charging Systems.***

Potential Elements of the Performance:

- Identify the fundamentals of electronic charging systems.
- Describe the construction features, types and applications of electronic charging systems and components.
- Explain the operating principles of electronic charging systems.
- Perform inspection, testing and diagnostic procedures of electronic charging systems and components.
- Perform service procedures on electronic charging systems and components.

**III. TOPICS:**

1. Computer Fundamentals
2. Gasoline Engine Electronic Fuel Management
3. Diesel Engine Electronic Fuel Management
4. Electronic Charging Systems

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

**Title:** Understanding the Outboard Motor

**Edition:** 3rd

**Author:** Stagner

**Publisher:** Pearson Education

**Title:** Boat-owner's Mechanical and Electrical Manual

**Edition:** 3rd

**Author:** Calder

**Publisher:** McGraw Hill

**Title:** Safe Boating Guide

Transport Canada

Free Publication

**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 Testing	35%
Application Experiences	35%
Final Assessment	30%

The following semester grades will be assigned to students:

<b>Grade</b>	<b><u>Definition</u></b>	<i>Grade Point Equivalent</i>
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 be 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 notes 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.