

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: MOTIVE POWER ENVIRONMENTAL TECHNOLOGY

CODE NO. : MPF131 **SEMESTER:** TWO

PROGRAM: Motive Power Technician – Advanced Repair
Motive Power Fundamentals:
• Automotive Repair
• Heavy Equipment & Truck Repair

AUTHOR: JAMIE SCHMIDT

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

APPROVED: *“Corey Meunier”* _____
CHAIR DATE

TOTAL CREDITS: 3

PREREQUISITE(S):

HOURS/WEEK:

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

I. **COURSE DESCRIPTION:**

Various applications and developments in the area of technology have an increasing impact on all aspect of human endeavor and have numerous social and economic implications. This course will examine the Motive Power industry and its effect on our environment and economy. You will study the fundamentals of new and emerging environmental technology such as: bio mass fuels, electric and hybrid vehicles. You will be exposed to emerging views and gain an understanding of the impact of the social characteristics of transportation technology and its relation to the environment. This course will explore the impacts of these concepts and practices on everyday life.

This General Education course is connected to Themes 3 and 5.

II. **LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

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

1. **Outline the global trends relating to various fuel sources.**

Potential Elements of the Performance:

- Understand the environmental impacts of fossil fuels
- Debate the impacts of biofuels as an energy trend.
- Discover the social and economic realities of alternative fuels
- Examine the development and infrastructure required for technologies relating to the use of hydrogen as a fuel source.
- Discuss the circumstances relating to global sources of fossil fuels.

2. **Discover the benefits and consequences of electricity for transportation**

Potential Elements of the Performance:

- Examine the consequences of using various means of generating electricity (i.e.: coal, uranium , solar ,wind ,water)
- Predict the impact on infrastructure requirements for implementation

3. **Compare the environmental impacts of the Motive power industry**

Potential Elements of the Performance:

- Discuss the effects of ozone depleting substances on the environment

Understand the effects of mismanagement of waste products.

- Connect the effects of vehicle emissions on environmental effects such as global warming, acid rain, ground and water pollution.

4. Adopt a responsible work ethic relating to the global carbon footprint of the Motive Power industry.

Potential Elements of the Performance:

- Understand the significance of ongoing maintenance of emission control systems.
- Compare the life cycle assessments of products used in the Motive Power industry from cradle to grave
- Integrate the historical perspective of Motive power into an understanding of changes necessary to reduce the carbon footprint of the industry.

III. TOPICS:

1. Fuel Sources
2. Electric and Hybrid Technology
3. Environmental Issues
4. Environmental Technology and You

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Automotive Technology, Canadian edition.

V. EVALUATION PROCESS/GRADING SYSTEM:

Tests 60%

Assignments and classroom exercises 40%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<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.

It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be granted admission to the room.

**Cell phones are NOT allowed to be on
In the classrooms or shop areas during class time.**

Eye, Face and Foot Personal Protection Equipment (P.P.E):

Students are required to wear appropriate Personal Protection Equipment (P.P.E) in designated areas at all times. The designated areas for eye and foot protection in the Motive Power areas are: C1073 (Automotive), C1000, C1010, and C1040 (Truck/Coach and Heavy Equipment) and C1120 (Marine and Small Engines). Appropriate P.P.E must also be worn when facing hazards outside of these designated areas.

Minimum Eye Protection:

All protective eye wear shall meet the requirements of:

C.S.A. - Z94.3 or A.N.S.I. - Z87.1 +.

Approved safety glasses (lens and frames) shall have side protection such as wrap around design or fixed side shields.

Minimum Foot Protection:

1. Boot height- minimum 5 ½" uppers, measured from the top of the sole.
2. CSA Green Patch rating.

VII. COURSE OUTLINE ADDENDUM:

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