

I. **COURSE DESCRIPTION:**

In this course the student will learn basic aspects of four different but related trade areas: Automotive, Marine and Small Engines, Heavy Equipment and Truck Coach. The course will cover the shop and safety practices related to all of the trades and the student will learn to use the appropriate tools used in a safe working manner. The student will learn about the types of internal combustion engines used in these trade areas and learn to do basic maintenance to the engines. He or she will also learn about the, fuel, , suspension steering and braking systems used in the different types of vehicles and equipment used in the Motive Power Trades Areas. The student will be introduced to the computerized aspects involved in the Motive Power Trades from ordering of parts and supplies to the electronic computerized controls and diagnostics used on today's vehicles and equipment.

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

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

1. ***Use the appropriate shop equipment and hand tools associated with the Motive Power Trade areas taught in a safe and proper manner.***

Potential Elements of the Performance:

- demonstrate the ability to use shop hoists
- choose the proper tool for the task to be performed
- demonstrate the ability to work safely in a Motive Power Shop environment

2. ***Demonstrate basic theoretical knowledge of the topic areas covered in the four Motive Power Trade Areas listed;***

Potential Elements of the Performance:

- identify the differences between the types of engines used in the Motive Power Trade areas
- locate and identify the vehicles or equipment's transmission and drive axles
- list and identify the steering system and suspension system of different types of equipment and vehicles
- identify the type of braking system relative to the vehicle or equipment used in each trade area
- compare the sub-systems of each trade related vehicle or equipment and identify the similar mechanical and electrical components and their intended use
- use electronic and hard copy manuals to locate and identify electrical and electronic components on various types of equipment and vehicles
- use electronic parts and service system to provide identification and service procedures for automotive systems

3. *Perform basic shop tasks associated with the theory related to each topic area in a safe working manner according to manufactures service procedures*

Potential Elements of the Performance:

- perform an engine teardown ,identify the parts and measure them for reuse
- perform simple visual and mechanical tests to ensure that the sub systems; suspension, steering and brakes are working in a safe manner

III. TOPICS:

1. Trade Practices and procedures; as related to the motive power trades including: Automotive Technicians, Truck and Coach Technicians, Heavy Equipment Technicians, Truck and Coach Technicians, Heavy Equipment Technicians and Marine and Small Engine Technicians
2. Engine Types and Sub Systems: Overview of each Trade Area and the types of engines used and the subsystems of each
3. Motive Power Brakes
4. Motive Power Fuel Systems
5. Motive Power Measurement

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- work boots and safety glasses required for all shop classes
- coveralls or other suitable clothing required for shop classes
- binders, pencils, pens (student's responsibility)
- no text book required - handouts will be provided for course related topics

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 – 20% of the final grade is comprised of term tests.
- Assignments – 20% of the final grade is comprised of a number of technical reports.
- Shop – 60% of the final grade is comprised of attendance, punctuality, preparedness, student ability, work organization and general attitude.

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

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%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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 Motive Power Department Policy that once the classroom door has closed, the learning session has begun. No admittance to the classroom will be allowed.

VII. COURSE OUTLINE ADDENDUM:

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