

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Transmission & Auxiliary Power Systems

**CODE NO. :** MSE250 and MSE719                      **SEMESTER:** TWO

**PROGRAM:** Motive Power Fundamentals – Small Engine Repair (5084)  
Small Engine Mechanic – Level 2 Apprenticeship (6091)

**AUTHOR:** Gord Strachan

**DATE:** January                      **PREVIOUS OUTLINE**                      January  
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**  
**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 test and maintain transmission and auxiliary 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 Variable Ratio Belt Drive Systems.*****Potential Elements of the Performance:**

- Describe the history, purpose, types of variable ratio belt drives systems.
- Describe the construction features and application of variable ratio belt drive systems and components.
- Explain the principles of operation of variable ratio belt drive systems.
- Perform the dismantling, inspection, testing and reassembly procedures of variable ratio belt drive.
- Describe manufacturers' maintenance procedures for variable ratio belt drives.

**2. *Test, Diagnose and Service Clutch Assemblies*****Potential Elements of the Performance:**

- Describe the history, purpose, types of clutch systems.
- Describe the construction features and application of clutch systems and components.
- Explain the principles of operation of clutch systems.
- Perform the dismantling, inspection, testing and reassembly procedures of clutch systems.
- Describe manufacturers' maintenance procedures for clutch systems.

**3. *Inspect and Maintain Fluid Power, Hydraulic and Pneumatics.*****Potential Elements of the Performance:**

- Describe the history, purpose, types of hydraulic and pneumatic systems.
- Describe the construction features and application of hydraulic and pneumatic systems and components.
- Explain the principles of operation of hydraulic and pneumatic

systems.

- Perform inspection of hydraulic and pneumatic systems and components.
- Describe manufacturers' maintenance procedures for hydraulic and pneumatic systems.

### III. TOPICS:

1. Variable Ratio Drive Belt Systems
2. Clutch Assemblies
3. Fluid Power, Hydraulics and Pneumatics

### 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:** Small Gas Engines

**Edition:** 10<sup>th</sup>

**Author:** Roth

**Publisher:** Goodheart-Willcox

**Title:** Small Gas Engines (workbook)

**Edition:** 10th

**Author:** Roth

**Publisher:** Goodheart-Willcox

**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	45%
Application Experiences	25%
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.